

Periodical

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The AMERICAN RIFLEMAN

The Rifle 1885, Shooting & Fishing 1888, Arms & the Man 1906

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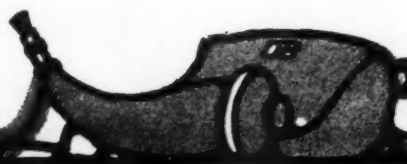
By L. Jacob

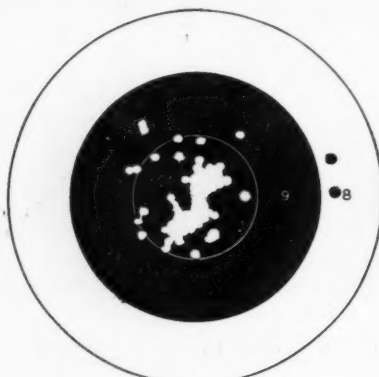
The 1924 International Team

By Maj. L. W. T. Waller

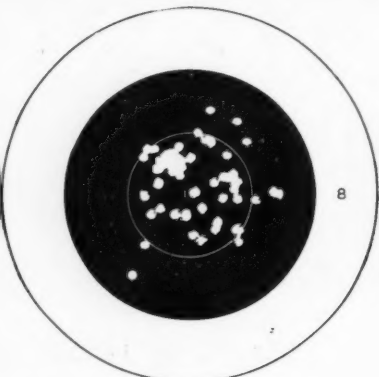
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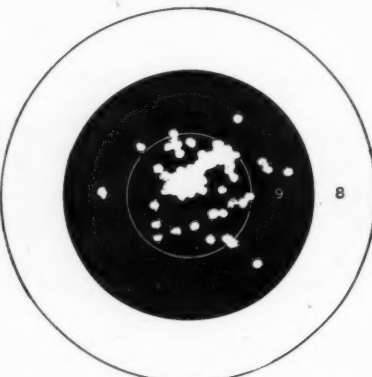




Composite of five 10-shot targets, made by W. J. Coons in winning second place in Metropolitan Championship.



Composite of five 10-shot targets, made by J. W. Gillies in winning the Metropolitan Championship.



Composite of five 10-shot targets, made by Paul Landrock in winning third place in Metropolitan Championship.

A Wholesale Clean-Up

At the Metropolitan Rifle League Matches just concluded, the US .22 N. R. A. established a record of wins which will stand for many a day. This sure-shooting .22 literally "swept the boards," winning every one of the ten matches and forty out of the fifty prize-positions. Moreover, of the thirty-five possibles registered, twenty-six were made by shooters using the US .22 N. R. A.

CHAMPIONSHIP MATCH

100 Yds.—Standard N. R. A. Target

Won by J. W. Gillies, Manhattan and Roosevelt (N.Y.) Rifle Clubs, shooting a Peterson-Ballard rifle with Fecker Scope. Score 495 x 500.

First seven places and eighteen of the twenty-five prize-positions were won with the US .22 N. R. A.

The US .22 N. R. A. has won this match three years hand-running. 1923 Score: 494 x 500—L. J. Corsa, Manhattan Rifle Club. 1922 Score: 493 x 500—E. B. Rice, Mahwah (N. J.) Rifle Club.

RE-ENTRY MATCHES

100 Yards—Pope Target (4/10" Ring)

Match	Winner	Club	Score
1.	Joseph Martin	Manhattan Rifle Club	24
2.	(tied) J. W. Gillies, Manhattan and Roosevelt Rifle Clubs		22
	H. J. Mann	Fort Slocum, N. Y.	22
3.	J. W. Gillies	Roosevelt Rifle Club	22
4.	J. W. Gillies	Roosevelt Rifle Club	22
5.	George Demeter	Yonkers Rifle Club	25
6.	E. B. Rice	Mahwah (N. J.) Rifle Cl.	24
7.	Paul Landrock	Manhattan Rifle Club	25

HANDICAP MATCH

100 Yds.—Standard N. R. A. Target

Also won by J. W. Gillies. Handicap 6. Score 1000.

First six places and fourteen of the seventeen prize-positions won with the US .22 N. R. A.

In this match, Joseph Martin, Manhattan Rifle Club, the highest scratch man, shooting a Pope Barrel rifle with Fecker Scope, scored five "possibles" and five 99's, winning fourth place.

Indoor one-hundred-yard shooting is the "acid test" for accuracy. Look at the targets reproduced herewith. Is there any question of the extreme accuracy of the US .22 N. R. A.?

UNITED STATES CARTRIDGE CO.

111 Broadway

New York, N. Y.



.22 N.R.A.
Long Rifle Cartridges

Possibles Made During Championship Match

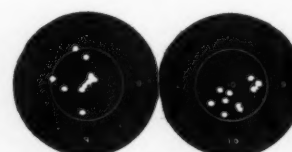
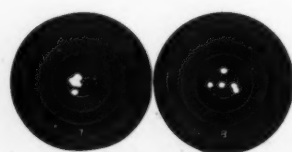
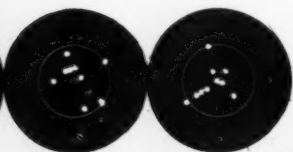
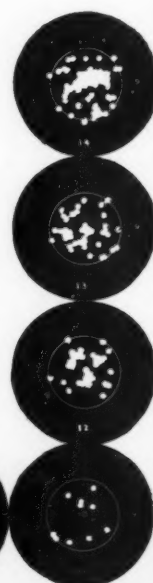
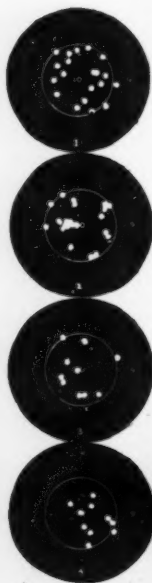
1. J. W. Gillies (2)
2. L. T. Everett (2)
3. C. H. Johnson
4. Leo Manville
5. Paul Landrock
6. W. J. Coons

Possibles Made During Re-Entry Matches

7. George Demeter
 8. Paul Landrock
- The group shot by George Demeter is one of the smallest ever made at 100 yards. The actual group is no bigger than a dime.

Possibles Made During Handicap Match

9. James Murray
10. Leo Manville
11. Marshall Murray
12. Paul Landrock (3)
13. J. W. Gillies (4)
14. Joseph Martin (5)



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The Personal Equation and the Part it Plays in Shooting

By J. R. Bevis

WITH a good instrument a *skilled* observer can determine the clock error within about one-thirtieth of second of time, provided proper means are taken to ascertain and allow for the personal equation of the observer." —(Dr. C. A. Young, Astronomer, Princeton). To illustrate, as a star approaches the reticule (wires) of a telescope the observer presses an electric button so that a record may be made just at the moment when the star is on the wire. The error that arises between the record made and the record that should have been made is the personal equation of the observer and "varies from plus two-tenths to minus two-tenths of a second." Quoting again: "It is the annoying human element and always more or less uncertain and variable."

Shooting is an identically parallel case to the taking of time from a star. Since no one can hold on the bulls eye, he presses the trigger as the front sight approaches the bulls eye, estimating that the bullet will leave the muzzle just as the sight is *ON* the spot. And like the most skilled observer of time he may and does make a slight error either way, minus—if the sight gets over the spot before the bullet leaves the muzzle, and plus if the sight does not reach the spot before the bullet leaves the muzzle. The movement of the star across the field of the scope is constant, uniform and positive; the motion of the sight is variable, untrue and negative. The shooter estimates the moment of pressing the trigger by the rate and direction of the motion of the front sight and pulls at what he thinks is the proper time. This is the crucial moment. For, after the brain has received through the eye the impression of the position of the front sight, it requires about one-thirtieth of a second for the message "pull the trigger" to be transmitted to the finger. In the meantime the sight has been moving. The message once sent to the finger cannot be recalled, neither can it be overtaken by another message cancelling the first if necessary, or substituting another message for the one already sent. The skilled shooter, like the skilled observer, observes to a fair degree of accuracy the position of the sight when the bullet left the barrel and calls his shot with some degree of certainty. (We are omitting from this discussion the personal equation of the rifle.) Since the bulls eye is neither a line or a point, the

shooter may make an error either way within certain limits and still score a hit. But, if the limitation of error is exceeded either way, he scores a miss. In having a limitation of error the shooter that much has the advantage of the observer. The shooter may consistently make perfect scores for a long period and then tumble to a wide miss. The cause of this tumbling is the essence of this paper. It, in some cases, may be attributable to poor ammunition and quite too frequently that cause is assumed, but in a great majority of cases it is attributable to one's self, rather than to some extraneous condition.

"Nine 5's and now for another possible;" "100 straight is not so bad;" "I haven't made a 5 today;" "I can't hit a flock of ducks"—these and similar expressions are common on the range, in the field, in the gallery, or at the traps. Every person, experienced in rifle, pistol or shotgun shooting has had similar experiences, has had his "ON" times when he couldn't miss; his "OFF" times when he couldn't hit.

When one is shooting consistently and regularly, "ON" and "OFF" times are very similar in occurrence to meteorological phases in which a low follows either precipitately or gradually a high. A high then follows the low, but only after the shooter has established his equilibrium again, after he had thrown off the cause of the low.

Of the many instances of "OFF" times witnessed and analyzed by myself, I give herewith three that stand out pre-eminently and exemplify some of the causes that produce "OFF'S." (1.) A well known pistol shot, having just made a record of twenty-four successive fives, scored a three on his twenty-fifth shot. (2.) In a shoot-off by three men in a gallery, strings after strings of possibles were made, until almost midnight when one scored a four. (3.) At a State trap shoot a friend was well in the lead, only to tumble headlong the next day. These "OFFS" were not attributable to faulty ammunition, wind, light or any kindred causes.

That the highest efficiency in any art is attained by the most complete co-ordination of eye, mind and muscle, and the intelligent application of the scientific principles upon which the art is based needs no proof. We see the demonstration of the truth in the musician, the surgeon, the baseball pitcher,

and by every real expert (the latter used in the highest sense of the word) in his line. If the co-ordination of these elements were constant; if every nerve and muscle were *en rapport* with the eye and mind, then the mental and physical body would be in perfect equilibrium, and the highest proficiency attained. But this status is not always so. There is ever a change in that intimate relation of eye, mind and muscle; less, however, in him who has developed the power of co-ordination to a considerable degree; less in him who has the more complete control over himself in his daily life. It is this variation in the power of co-ordination that is the basis of our "Off" times in shooting; the basis of our errors in pulling the trigger exceeding one way or the other the limitation of error.

The equilibrium of the shooter, his power of co-ordination, his synchronism, may be disturbed or completely overthrown temporarily by a cup of coffee or tea, a heavy meal, a smoke, over-exertion, a change in atmospheric conditions, depression, excitement, anger, self-consciousness (stage fright), anxiety, annoyance, lassitude, lack of concentration upon work, non-sympathetic environments, deviation from his regular routine, etc. An analysis of the three instances mentioned will demonstrate some of these causes. The reader will recall similar instances.

The first person had been shooting regularly in high all day, was at his best. At night the shooting was continued before a bunch of friends, and one perceiving that an enviable record would be established if the shooter scored a five on the twenty-fifth shot, remarked, "Now, old sport, do your ———." Although the shooter had kept himself in perfect adjustment with the ever-increasing anxiety made by each succeeding five, and had his equilibrium before the remark was made, his anxiety to make good was incited by that remark in a greater ratio than he could attune himself—and destroyed his co-ordination. In auto parlance, "his timing mechanism was off." The party told me afterward that he would have taken his pistol down and waited a few minutes, as he was accustomed to doing, but realized the futility of doing so, and did his best. He attributed his miss to "too high tension," which is expressing the condition in different words. In the second case, the cause and result were practically the same, with the exception that an over zealous friend *whispered* "I'll bet ten to one he scores." In the third case, the man thought best to retire early and get a good night's rest. In an hour or two he awoke and began planning his method of procedure the next day until the wee hours of the morning when he snatched a few hours of restless sleep. On arising the next morning, almost exhausted, he was well aware of his inability to co-ordinate (all unstrung) and, of course, took a precipitate tumble in his scores.

At a turkey shoot where a man, having won almost a dozen turkeys, lost out because he lost his temper. The scorer decided the turkey was not hit; the shooter knew it was. The next shooter hit the turkey, and when it was examined, it had two bullet holes through it.

Some years ago I witnessed an exhibitor (professional) do some of the finest work. He began his preliminary stunts to "warm up" or technically speaking, "tuning up his power of co-ordination," while some wiseacres kept up a constant badinage. The demonstrator, perceiving that his progress was being seriously jeopardized, took the extraordinary chance at great hazard of failure and further humiliation, of attempting a shot requiring the highest degree of co-ordination.

Turning sharply to his spectators with no little pique in his manner he remarked, "Now watch and I'll show you something to smile at." Whether through curiosity or respect every eye was turned toward him. Not a breath was heard. He had their undivided attention at least for a while and that was just what he wanted. Taking a pistol in either

How many shooters have blamed their "unaccountables" upon either rifle or ammunition?—two very consistent factors when compared with that extremely variable and uncertain factor, the human element.

Doctor Bevis has presented the case of human error, its effect upon accuracy, the contributory causes of and remedies therefor, in a most comprehensive manner. His conclusions will undoubtedly throw light upon a subject which riflemen have understood too little for their own good.

There is another human error factor in addition to that of physical condition and the co-ordination of mind and muscle which plays an equally important part in the making of good shots—Temperament.

In an early forthcoming issue this will be discussed by a man who for twenty years has closely observed the work of target shots, good, mediocre and poor.

Between these two articles, the shooter should come to a better understanding of the complexities which enter into high and low scores.

The Editors.

hand and turning them upside down, he scored simultaneously two targets moving in opposite directions at fairly wide angles. After that the crowd was with him. The psychology of the situation was wonderful. Feeling secure in their assistance, he attempted some feats that he never attempted before, that he had dreamed of, and came out successful. He was waiting just for this moment of many co-ordinating minds to attempt such marvelous feats.

The reader will see in the last paragraph the psychological influence of sympathetic environments,—the strengthening of one's co-ordinating powers by the co-operation of the spectators. A rider lifts his horse over the fence.

The question that most interests us is, "How can the personal equation be reduced to a minimum?" The answer, more easily written than practiced, is, "by constant, systematic and in-

telligent practice in developing the power of co-ordination of eye, mind and muscle. This practice may be had in one's daily vocation, more or less. The dentist, the watchmaker and those who are constantly training their fingers to accurate work should be the best marksmen, and would be with intelligent practice, plenty of outdoor exercise and proper muscular development. Training oneself to endure annoyance without distraction from one's duties is most essential (good habit, too). Learning to write well is a mighty fine practice.

On the other hand one's personal equation may be compensated to a considerable extent. Just as the spark of an auto must be controlled to meet certain conditions, so must the timing of ones self be adjusted. His mechanism must be attuned.

Those causes (strong coffee, smoking (?), excitement, anger) that incite, that increase the tension are termed plus. In which case one pulls the trigger too quickly. Remedy—drink slowly plenty of cold water; slow down in firing, take it coolly. Those causes (a heavy meal, disappointment, etc.) that depress are termed negative. In this case one pulls the trigger too slowly. Since a heavy meal is difficult to compensate, it is better to avoid eating such until the close of the day, after shooting. Otherwise, drink something warm, liven up both in firing and in mental attitude.

Self-consciousness, lack of concentration, etc., produce flinching, so intimately associated with our "Off's."

Flinching is the involuntary contraction of muscles. Lack of concentration may be the result of fear, stage fright, annoyance, attempting to carry on conversation while shooting, or by the roaming of the mind. Flinching, then, occurs with those who have not developed concentration of mind to a marked degree.

It requires less mental effort, less concentration to close all fingers simultaneously than to close any single one. Try it. And so when shooting, if one's attention is diverted, less concentration is exercised in pulling the trigger. Instead of contracting the muscles of the trigger finger to a nicety, the shooter contracts the entire hand and flinches. There is a great deal of psychology in the creeping trigger as well as in the instant trigger. Just two different ways to get concentration on that trigger finger. There is the same psychology in the word "squeeze," which term means to pull the trigger slowly, not jerk it.

It may be stated truthfully that flinching may be induced by suggestion. The coach who says "now don't flinch" certainly defeats the object desired. At Camp Perry a few years ago, during the war, a certain captain coaching some recruits to shoot, invariably told them not to flinch, and just as invariably did almost every man flinch. The captain nor the men did not know the cause.

The best and only method of preventing or curing flinching is the absolute concentration of the mind on that trigger finger. Watch what it is doing. GET ONTO THAT FINGER WITH YOUR MIND AND STAY THERE.

SOME BULLETS

IN THE

PEACEMAKER



By F. C. Ness

THE .45 Colt single action is a HE-gun without frills. And, because it can be relied upon to place a knock-down slug in the required spot when needed, it is necessarily devoid of the mollicoddle refinements we find so desirable in our target weapons. The pull must be heavy to insure against accidental discharge. A light one would wear down too soon for the man who takes it back into the wilds and stays there. The sights must be quick for rough accuracy, and substantial enough for the hard knocks likely to be encountered. The size of the bullet and the power of the charge means a stiffer recoil than is compatible with target shooting ideals. The big generous handle of the Single Action is well adapted to stiff charges and seems to absorb the recoil admirably. One never is affected by the heaviest loads shooting afield where there is an appreciable time lapse between shots. But a string at the target is different, and scarcely to be thought of. Fifteen "heavies" is about my limit. Here is an extract from a Peacemaker enthusiast of New York: "Your article in the H-T-T reminds me of my experience with 'six' guns. My first .45 Colt won my heart, but am all for smokeless. A full load of black is too much for me for accurate work. I can stand a few shots and then I flinch. I have had my arm so lame from shooting 200 shots full black load, I scarcely could get my coat on."

As a HE-gun there is no doubt that the 5½-inch barrel is the most convenient to carry, the quickest to pull or draw, and to handle. In keeping successive shots near or on the target, the short barrel is an aid to the quick realignment of the sights thrown up by the recoil of the preceding shot. And for the first shot as well, when the target is moving and the aim must be hurried, the 5½-inch is the quicker. But for an accurate shot with plenty of time give me the 7½-inch barrel every time.

Though not overly sanguine as to the scoring possibilities of a weapon which ostensibly was anything but a target gun, I wanted to give the old Peacemaker every chance to do her stuff. When I essayed to assay .45 Colt ballistics, the first thing I did was to put on a brand new barrel 7½ inches long with a high front sight. Next, I roughened up the smooth walnut grips, and changed the trigger-spring bevel, and polished the bearing surface of the hammer notch. From looks it wasn't much of a job, but I could keep my grip on the stock with a sweaty hand, and the doctored lock-work gave me a smooth 2½-pound

pull. The barrel was turned into the frame as far as it would go, but still that front sight was a little off—to the right. Having had the same trouble with the 5½-inch barrel, I still had that right-side gutter in the frame top, and, giving the front blade a little left tilt with my pliers, I let her go at that. If she did carry a trifle to the left, it would not matter greatly since I was shooting mainly for groups anyway. Then I tested her with the usual store product and filed down that high front sight until I had the bullets grouping in the "ten" ring of the S. A. target at twenty yards. Now, I merely had to load my different test loads to come up to the factory elevation, since I had established a basis of comparison. As a side arm for a serious minded purpose I wouldn't give an empty cartridge box for the Peacemaker fixed up in this way. It's unhandy to carry, unhandy to shoot, no good for fast work, and dangerous. The weight of the gun could pull the light trigger and blow a half-inch hole through your foot. In other words, she had lost her Peacemaker identity and was now only useful for the most deliberate work. But she made a splendid plaything with light loads, and was equipped in the best possible manner for connecting with the bull's eye shot after shot.

My next concern was to eliminate the human error as much as possible in the testing. This meant some form of rest. I had a six point rest like the one Ashley Haines used in Obscurity Hollow for testing the big six guns, but it was more than seven miles out on the farm, and as my time was limited and my business demanded my presence in town, I was compelled to get along without it. I experimented a great deal with the sand bag from the prone position, but found it no better than the offhand position in most respects, and worse in others. With the long-barreled .22 pistol the sand bag helped to reduce group sizes, but with the Peacemaker it merely aided in cutting down the horizontals, while the extreme verticals opened the groups bigger than those shot offhand. A sand-bag group with the .45 Colt, having an extreme lateral deviation of only one inch, would still measure over four inches, due to the high and low shots. I, of course, abandoned the sand bag, and realized I would have to adopt some sort of a body rest, of which I had used several, with various hand guns, and had depicted in a previous article to THE AMERICAN RIFLEMAN. A plank V-rest for the revolver muzzle would have been a great aid, but that is no good without a solid

support and firm anchorage. I was forced by circumstance to do my shooting where and how and when I could about the city limits, and scarcely ever visited the same place more than a dozen times, so the plank V-rest was out of the question.

The body-rest positions finally chosen were three: (1) the sitting position with gun hand resting on upraised right knee, left hand on the ground behind the shooter, and body braced by rigid left arm; (2) the recline position on left side with feet toward target and the gun hand resting on right hip, left elbow on the ground behind the head, and head braced by bent forearm and left hand; (3) the back-rest, reclining sitting-position, with both knees raised and gun held in both hands between the knees, body butt squarely towards the target. The latter is the most steady, but also the most annoying as to explosion and gun disturbance, and dangerous if you are inclined to monkey with uncertain pressures. The other two positions the more closely resemble offhand shooting and would occasion no readjustment of the sights. Bodily condition has an effect, and sometimes I have found them but little better than the offhand. However, this but rarely, and generally very fine and reliable results can be obtained. Always they are more consistent, and absolutely can be counted on to eliminate those occasional extremely wild shots that insist upon creeping in on offhand work. There is not the slightest doubt that, had some form of gun rest been used, the group measurements and figures to follow would have been greatly reduced, and while the targets cannot serve to prove the absolute accuracy of the gun or loads, they give a pretty reliable indication of the relative behavior of the different bullets, powders, and loading methods compared. In many cases they are equal to factory ammunition and often superior.

The title cut shows eight .45-caliber, hand-gun bullets, reading from left to right:

		Diam. in.	Weight grs.
1. Ideal	457130 Collar But.	.457	144.0
2. Bond	454675 260-gr.	.454	252.5
3. Bond	454510 190-gr.	.454	190.8
4. Ideal	454190 Expr.-H. P.	.454	235.2
5. Bond	454690 243-gr.	.454	242.2
6. Bond	454550 184-gr.	.454	188.3
7. Ideal	452374 220-gr.	.452	219.2
8. Bond	455702 240-gr.	.455	248.5

The last two are .45 A. C. P. (pistol) bullets, but I have used them all in the Peacemaker, except the Ideal Auto. bullet (No. 7), which is too small for the .45 Colt in diameter.

The Bond 454510 was chosen in preference to the Bond 454550, because they are of about the same weight, and the former was deemed superior on account of its flat point (afield) and its clean-cut "wad-cutter" holes in the target. I should judge it a steadier bullet as well, of the two, for fifty-yard work. Both the first and the last (Nos. 1 and 8) have to be resized or reduced to .454, before loaded into the .45 Colt case, though I used the 455702 Bond .45 A. C. P. bullet in the original diameter. This gives a wide range of Peacemaker bullets from which to select, from the 139-grain round ball to the 260-grain heavy weight, and should prove adequate for any purpose. The Yankee Specialty Company last year made a stock mould for a Hollow-Base .45 Colt bullet, otherwise like the regular Ideal 255-grain, 454190. The idea was to do away with leading in oversize barrels, through a gas-sealing upset of the hollow base of this bullet. Mr. Clark of New York sent me a sample and a letter presenting the views of a group of handgun enthusiasts touching on this bullet and dealing with oversize Colt barrels. Though I have never had this trouble nor noticed an oversize tendency in Colt barrels, either in shooting or in measurements, his letter is well worth printing. In part it follows:

"We have always had more or less leading of Colt barrels in .32, .38, and .45 caliber. Have shot several Smith & Wessons in same calibers with the same ammunition and found no lead. Several of us have been studying on this for the last year, and, measuring the bore, find the S. & W. are bored smaller. Bullets cast in Ideal moulds and sized in Ideal dies fit them very snug. We are satisfied that this is the cause of our trouble. Colt barrels are bored too large or Ideal tools too small as you wish, but at least nine-tenths of the people who reload use Ideal tools.

"We have one .45 Colt New Service, the oldest Colt we have around here, and has been shot over 50,000 shots. Our Ideal bullets fit this barrel very tight, and it is bright as new inside. It is nearly impossible to lead this gun. I haven't been able to test out this new Yankee bullet as much as I would like, but have found no lead in my Colt since I have used them. I believe they are going to expand so perfectly to these, what I call 'oversize' barrels, that there will be no leading unless more than the amount of powder recommended on the canister is used. And I do not believe these bullets can injure the smaller barrels."

Charges were thrown with an Ideal powder measure, and checked on a pair of accurate Bond scales. All loading was done with a Bond tool, and any coming out with tipped or shaved bullets were of course eliminated with great care. Due to the nature of available terrain, most of the shooting was done at twenty yards, but enough were tried at longer ranges to show what could be expected of the twenty-yard groups when shot at fifty yards. The 190-grain, while reported to me as an accurate fifty-yard load by other shooters, was not tried at the longer range, because we had a better bullet for the purpose in the 235-grain

Ideal. Four different cases were used as follows:

1. West. (blk. & smok) with b'tt crease, primer: West. No. 7, U.M.C. No. 6, length: 1.28".
2. Rem. U.M.C. (blk) without b'tt crease, prim.: Wes. No. 7, U.M.C. Nos. 6, & 2, length: 1.265"
3. Rem. U.M.C. (smok) with b'tt crease, prim.: Wes. No. 7, U.M.C. Nos. 6 & 2, length: 1.129"
4. Rem. U.M.C. (S&W Schofield), no b'tt crease; primer, West. No. 1½, U.M.C. No. 1; length, 1.29"

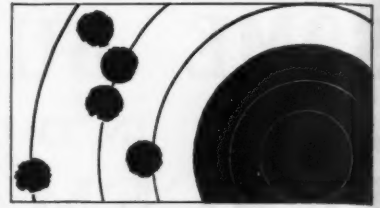
The shorter cases were better for the dense powders with the light bullets, or with the big bullets without crimp. While the longer cases were more suitable for the bulk powders, the difference in either case was not great enough to be readily noticeable. In the light loads, I generally crimped the shell muzzle lightly, especially with Bull's Eye, and No. 3, but in most cases results were better when the bullet was held friction-tight and no crimp used. As before stated, the front sight had been filed for the proper elevation of the U. M. C. factory cartridge. I found it difficult to maintain this elevation with the different bullets and loads, on account of what I deemed the difference in barrel-flip. In the case of du Pont No. 80, 13.7 grains (by table) would shoot higher than 14.8 grains of the same powder with the same bullet. And in the case of Bull's Eye, an additional grain would sometimes raise the elevation, while two more grains would lower it. Peculiar, but true.

In my discussion of "Some Powders in the Peacemaker," I eliminated the round ball, and the Collar Button, as being impractical. I also condemned du Pont No. 3 and black powder, each for a different reason. While in three attempts I was unable to get any du Pont No. 5 for trial, I have every reason to believe it one of the best powders obtainable for the purpose. Mr. Clark says in his very last letter: "I have also tried Bond 454510, 190-grains with 4.5 and 5 grains of No. 5, and it is a fine bullet for up to fifty yards. This bullet makes a handsome hole in the paper." There is no better short range bullet obtainable than this 190-grain Bond for the .45 Colt. It will do everything the others can, and do it better, besides serving purposes not covered by the others. See bullet No. 3 in the cut.

Strings were measured in groups of five shots each. In every case group-measurement figures denote the diameters of the smallest circles the two bullet holes farthest apart can cut. Results with King's Semi-, Hercules Bull's Eye and du Pont No. 80 stack up about as follows:

20 Yards Sitting	Av. of 5-shots	Mean diam.	Shots
	strings	inches	
Bull's Eye crimped	5	3.03	25
No. 80 crimped	10	3.09	50
King's no crimp	18	3.11	90
Rem., U.M.C. factory	3	3.708	15

This little table, prepared from my note book, gives a very typical comparison, in that the figure of merit registers three inches plus for all, and that the handloads are noticeably better than the factory regular load. The Bull's Eye seems to have a little the better of it, but this is merely 8/100 of an inch, and the fact that nearly four times as many shots were averaged in the case of King's must be

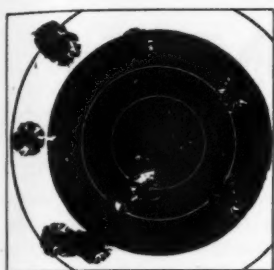


Five shots at 20 yards, sitting. Bond—454675, one Band out, U. M. C. Smokeless case and No. 2 primer, 25 grs. Bulk (Smokeless) Schuetzen. Resized to .452-in., no crimp.

taken into consideration. Most of the shots in all three powders were capable of keeping within the twenty-yard "bull," the groups in each case being enlarged by one, or possibly two, wide shots. The five-shot groups generally ran about 2¼, 2½, 2¾, or 3¼, and 2¾, but many of them measured under two inches. Figuring from the ease of loading, King's and No. 80 were better than Bull's Eye, because they could be loaded in loose plain cases and give about as good results as the latter in resized and crimped cases. King's was too dirty, even with two grains Schuetzen priming, and from my experience I unhesitatingly pronounce No. 80 the best possible powder for this particular bullet. My favorite loads with this bullet were as follows,— Bull's Eye, 5.6 grains by weight; King's, 20 grains plus two grains Schuetzen; No. 80, 14.1 grains by weight. The load of King's put eight of ten shots in 1¾ inches, and six of them cut into a single hole. Targets made with the other two powders were submitted with Part I.

Ideal believes that accurate revolver bullets should be tempered with one part tin to twenty parts lead, and Modern-Bond, also, recommends and casts their revolver bullets in this proportion of one to twenty. For use with smokeless, Mr. Clark prefers his .45 bullets of the following metal: twenty ounces of lead, one ounce of tin, and from two to eight ounces of best Babbit metal. All my bullets used in the trial, except the 260-grain Bond which were one to twenty, were of the following proportions: eight pounds of lead, four ounces of tin, and sixteen ounces of Babbit, which is a very hard mixture. When stiff charges are used it is best to have bullets hard, but this also means trouble with barrel leading. When too soft and driven hard with smokeless, they are apt to funnel out in revolvers with wide tolerance between cylinder and barrel throat, and, before they swage down and reduce to the barrel diameter, either pressures might be unduly raised, or the breech might become cracked from the oversize bullet. In the revolver, alloy bullets cast one to twenty are the best for general purpose. Of course in automatic pistols, alloy bullets must be much harder to function properly through the mechanism, and manufacturers insist that they must be metal-cased to insure loading.

The 260-grain Bond No. 454675, with its four bands and generous bearing surface, its weight, and its flat point, is to my notion the best HE-bullet that can be had for the HE-gun for which it was designed. It is the big brother of the Bond 190-grain, and, like



11.75 grs. by wt. No. 80 du Pont, U. M. C. Smokeless case, Western No. 7 primer. Resized to .452-in. (no crimp).



Another 5-shot group with 27 1/2 gr. King's Semi- and the 235 gr. Ideal H. P. S. A. .45 Colt at 20 yards from back-rest position.



Resized Ideal .452 bullet No. 454690 (243-gr. Bond) 11.75 gr. No. 80 du Pont, (by wt.).

the latter, cuts a clean hole in the target. It is accurate and carries plenty of punch. At fifty yards, eighteen grains of King's "Semi" gave factory elevation and shot into an eight-inch ring, evenly distributed. At twenty yards it gave the proper elevation, and shot groups with a vertical deviation of not more than 1 1/2 inches. Single unaccountable wide shots increased the groups, some of them up to 4 1/2 inches. At twenty yards 4.9 grains weight Bull's Eye shot better than the factory smokeless, and one group measured 1 1/2 inches, all but one in 1 1/2 inches. This load was tried on green poplar with these results: six-inch wood, bullet buried; five-inch, ditto; 4 1/2-inch poplar, bark broke in back; four-inch wood, clean penetration. This was a mild load and one-to-twenty temper. A stiffer load and harder bullet, undoubtedly, would have shown considerably more penetration. At twenty yards with twenty-five grains (bulk) Schuetzen it was very accurate, better than the others. The biggest group measured only two inches, and most of the shots would be grouped unbelievably close. The best results were gotten with the long bullet seated with one band out, just leaving enough room for the cylinder to revolve. This was the only load that shot one inch high at twenty yards, with the factory load as a standard. With the bullet seated normal this load showed too much pressure, and I should earnestly recommend a lighter charge, say about twenty grains bulk. While fancy, and for that reason impractical, it seems to furnish a load in the .45 Colt (7 1/2-inch) similar to the super-accurate rifle cartridges hand-loaded by certain single-shot marksmen, with a shellful of Schuetzen and a long heavy bullet lightly seated with one or two bands out. For personal reasons, I did not experiment with No. 80. This Bond 454675 has a crimping groove with a beveled shoulder that will win the approval of all. The bullet cannot be started forward and out of the shell by the jar of recoil, and the shoulder formed by the first or top band engages with the lip of the shell and the bullet is adequately prevented from receding into the case. See bullet No. 2 in the cut.

The 255-grain Ideal No. 454190 is the regular standard .45 Colts, solid, flat point bullet, intended to be used with thirty-eight grains F. F. G. black; five grains weight Bull's Eye; or seven grains weight R. S. Q. Being such it should act normally under most conditions. I have used it cast only in the Express mould, which makes it hollow point and lighter (235 grains), otherwise the same. See bullet No. 4.

This 235-grain, hollow point Ideal bullet is very accurate, and I like it fully as well as the target as the 260 Bond, though it does not cut a wad-cutter hole like the Bond. In the field I prefer it to the Bond. When speeded up, even the hard bullets I used (about one to eight) opened up nicely sometimes in wood, and when cast one to twenty as recommended should reliably make a ragged, tissue-tearing wound. Perhaps the 160-grain Bond develops more energy, but the hollow point of the same temper would make a rougher-cut wound, and I think there would be but little difference in shocking power between the two. Being lighter and more pointed, it can be speeded up more than the flat-pointed Bond, which is an advantage in the field in securing hits. To get the same high velocity in the 160-grain would augment dangerous pressures. But it is superior for another reason—its versatility. This 235-grain Ideal bullet has an advantage in that it works well with almost any powder. Only in one instance did the 260-grain Bond have the better of it, and that was with Schuetzen when loaded in the freak manner described, with one band out. Even with du Pont No. 3, poorest of Peacemaker propellants (in my opinion) the hollow point did fairly well when no results could be gotten with the 260-grain.

At twenty yards with 11.75 grains by weight of No. 80, it gave better groups than the light 190-grain Bond, and the shooting was more consistent. Also the elevation was right, and sometimes the whole group was in the bull. With the charge increased to 12.9 grains weight the shooting was the same. The biggest group secured with either load measured 2 1/2 inches. With 24 1/2 grains King's "Semi" and two grains Schuetzen, the bullet shot to same elevation and groups were as small, with the difference that an occasional wide group would appear. With twenty-five grains of Schuetzen, in the long "black" case, it shot to the correct elevation, and many times with no lateral deviation at all. Groups of 1 1/2 inches were common. With Bull's Eye, when loaded to the proper elevation, the groups ran a little larger at twenty yards, but at fifty yards results were pretty fair. Here are some shot at fifty yards with Bull's Eye, on August 6, 1922 (C-5 target, 7.3-inch black, see photo).

Weight grs.	No. shots	Diam. circle	
3.85	5	8"	4 in 5-inch, 2 in Bull
4.5	5	7"	3 in 3/4", 4 in 2 3/4", 5 in Bull
4.5	5	3 3/4"	even spread left edge Bull
5.7	5	3"	even spr'd right edge Bull

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When all is said and done, it would be hard to find a better all-around Peacemaker bullet than the Ideal hollow point. If I could have but one, it would be my choice. It is always my choice when I want a powerful field load. I load up with a stiff combination charge of King's and 4 1/2 grains of Schuetzen. This load leaves the barrel clean as a whistle. I have shot it up to 125 yards. At this range it would drop only ten inches from a point blank aim; at 75 yards, a drop of five inches, and at ranges between 50 and 70 yards I have been surprised with point blank hits from the sitting position.

The 243-grain Modern-Bond 454690, is a good accurate bullet, a compromise between the Bond 260-grain and the Ideal 235-grain, and not nearly as good as either. With its round nose, its narrower bands, and its lighter weight it is not as effective for heavy work as the one, and not nearly so efficient for high speed as the other. And, with the two other better bullets available, it interested me but little, and I did not try it out as thoroughly as the others. Shown as bullet No. 5 in the cut.

With 11.75 grains weight of No. 80 it shot to the correct elevation and as accurately as the Ideal hollow point. (See target twenty-yard S. A.)

The 240-grain Modern Bond .45 A. C. P. bullet, 455702, when resized to .454 inches, would make a pretty good Peacemaker bullet in case no others were at hand. I used some in the .45 Colt merely as an experiment in extreme-pressure loads. They were used with full charges of dense powder in their original over-size diameter, and, of course, accuracy was very poor. This monkeying with extreme charges is, of course, bad business, and not to be recommended. For that reason, I have confined myself to only safe loads in this article. In my next paper I shall deal exclusively with these "Extreme Loads in the Peacemaker" merely as an interesting and dangerous experiment and not for their practical worth to the reloader, except, perhaps, as a warning. In no case should the loads detailed in this present story (Part II) be exceeded; they give enough pressures as it is. Bond 455702 shown as bullet No. 8.

In none of the shooting so far mentioned, did I have trouble with split cases or rim-cut shells. I had a big assortment, new and old, and when one expanded to extract hard from the cylinder, it was thrown out, as I had plenty on hand. The only resizing was done to the neck, as far as the bullet reached. These were all expanded to .452 inches to hold the .454-inch bullets friction tight. Chamfering the case-muzzle or shell-lip had no appreciable effect on the accuracy, but was generally resorted to because it facilitated the loading through easier bullet seating. Western No. 7 primer (smokeless) used almost entirely, with normal results throughout. U. M. C. No. 2 was used with the bulk powders. This black powder primer was tried a great many times with all the smokeless propellants except No. 3 du Pont, and behaved surprisingly well. Seldom, very seldom, got a hang

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Cupro Nickel vs. Gilding Metal

By Capt. James L. Hatcher, Ord. Dept., U. S. A.

THE first meeting of the War Department Board appointed annually to select ammunition for the National and International Matches is usually for the purpose of deciding on a suitable place for, and the best methods to be followed in carrying out the tests. The methods are determined with particular thought to insure equal chance to all competitors entering the tests.

The meeting of this Board is attended by representatives of the War Department and of the Ammunition and Arms Companies throughout the country representing the major technical interest in small arms. As a result of the discussions which take place at this meeting, many phases of the methods of testing small arms and small arms ammunition are brought to light. Some of the problems presented have been brought up at previous meetings, while others are new. These discussions result in new and improved methods of carrying out the tests. Often when a method of conducting tests is changed to improve it, a problem which has been discussed at some previous meeting, and is perhaps of long standing, takes on new importance.

In this, reference is made to a particular example; *i. e.*, the question of comparative accuracy of gilding metal jacketed bullets and cupro nickel jacketed bullets when fired through the same barrel.

This matter was first discussed several years ago at one of the meetings of the Ammunition Board when gilding metal began to receive so much attention. It was contended that due to metal fouling through cupro nickel, even though the barrels were properly cleaned, gilding metal jackets fired through the same barrel following cupro nickel would be inaccurate from deposits of metal fouling which could not be removed.

At the time the subject was brought up, it was not of particular importance, because then in the tests each competitor was assigned a definite number of rifles or barrels for his own ammunition throughout the test, the only change being from firing point to firing point, rotating rests from which the different types of ammunition were fired. This method of testing equalized certain errors in the testing devices; *i. e.*, those in the fixed rests, and each competitor was obliged to have introduced into his ammunition characteristics the particular characteristics of each rest.

To make these tests still more equitable, at its 1923 meeting, the Ammunition Board decided to assign barrels to fixed rests, the barrels to keep their original assignments throughout the test. The competitors then changed rests and barrels between strings, and, in this manner, each competitor was required to fire a certain amount of his ammunition from each barrel and its accompanying rest. Since it was known that competitors would submit types of ammunition having both cupro nickel

and gilding metal jackets, the question of affecting the accuracy of gilding metal jacketed bullets by having them follow cupro nickel at once became important. As previously said, even though "doped" with metal fouling solution, it was contended that the cupro nickel fouling would remain in the barrels to an extent sufficient to affect the accuracy of the gilding metal bullet. With an equal rotation of the rests and barrels, it followed that the gilding metal would at times be fired in barrels which had just previously been used with cupro nickel.

To determine accurately the effect of firing one kind of jacketed bullet after the other, Major Lee O. Wright, Chief of the Small Arms Division of the Ordnance Department, also Recorder of the Board, directed that a comparative firing test be made at Frankford Arsenal with the two types of bullets. At the same time he recommended to the Technical Staff that a duplicate test be run at Aberdeen Proving Ground. These tests were completed about the middle of November, 1923.

At Frankford Arsenal, two separate tests were made. The first one consisted of firing alternately in four Mann barrels, 1923 National Match ammunition having the gilding metal jacket, in comparison with a 180 grain, flat base, cupro nickel jacketed bullet. Five ten-shot targets were fired in each of two barrels, using the gilding metal bullets. Five ten-shot targets were fired in the other two barrels, using cupro nickel bullets. All barrels were then cleaned and "doped" to remove metal fouling. Then with the first two barrels, five ten-shot targets were fired, using the cupro nickel bullets, and five ten-shot targets were fired in the second two barrels, using gilding metal bullets. It will be noticed that these barrels were interchanged on the second string of five targets. The barrels were then "doped" and the same procedure followed until 300 rounds had been fired from each barrel, alternating between gilding metal and cupro nickel after each fifty shots.

In the first group of five targets with the gilding metal, the average mean radius at 600 yards was 3.12". In the same barrel the following five targets with cupro nickel gave a mean radius of 6.36". Next, the gilding metal following cupro nickel, gave an average mean radius for five targets of 2.97", while the cupro nickel again following gilding metal gave a mean radius of 5.35". It will be noticed that each showed a decided improvement after following the other. The figures just given are for one barrel of the four only, and are given as an example of what was uniformly true throughout the test.

The second test at Frankford Arsenal consisted of firing the 180-grain Western 1922 International Match ammunition, which has a gilding metal jacketed bullet, and Remington 1923 International Match with a cupro nickel

bullet. This firing done alternately in groups of five targets in two different barrels. The first group of five targets in which Remington was fired gave an average mean radius of 2.23". Western following Remington in the same barrel gave an average mean radius for five targets of 2.81". Remington then fired in the same barrel gave an average of 2.36", and Western following it, an average of 2.94" mean radius. Reversing this order in the second barrel, Western gave an average of 2.73", Remington following it, 2.69". Western again in the same barrel, 2.47", and Remington again following it, 2.56".

At Aberdeen Proving Ground, practically the same procedure was followed that was used in the first test at Frankford Arsenal, except that three separate methods of cleaning were introduced, and firing was done after each method of cleaning had been applied. Service ammunition and 1923 National Match ammunition were used, the former having the cupro nickel jacket and the latter the gilding metal jacket. Frankford Arsenal results were easily verified by the Aberdeen test. An example of the test at Aberdeen, the guns being "doped" with metal fouling solution, is as follows: This is for one particular Mann barrel. Gilding metal, average mean radius for five targets 4.08". Cupro nickel following gilding metal in the same barrel 6.50". Gilding metal then following with 3.74". Cupro nickel following that 6.553. Gilding metal 3.61". Reversing this order, cupro nickel fired first in another barrel gave 7.16", gilding metal following 3.61". Cupro nickel 7.59". Gilding metal 3.71". Cupro nickel 7.09".

The figures given above were very consistent throughout all of the tests, and while the size of the groups was not always reduced when firing gilding metal after cupro nickel, in the greater number of targets this was so, the average of the whole showing a reduction in group size when the gilding metal followed cupro nickel. The net group size of the cupro nickel did not appear to be affected by gilding metal. In spite of the reduction in group size of the gilding metal targets following cupro nickel, this latter condition of the test is not attributed as a cause of increased accuracy. The small groups are considered to be merely incidental to the test. The deductions which were drawn from these results indicate that the accuracy of neither type of ammunition is ultimately affected by one following the other.

As a result of the foregoing conclusion drawn from these tests, the test of International Match ammunition was held as outlined in the beginning of this article; *i. e.*, Mann barrels were assigned to fixed rests, and competitors, in rotating between rests, used the barrel assigned to the rest for firing their ammunition. In this manner, all competitors fired an equal number of rounds through each

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An Analysis of Game Bullets

By Townsend Whelen

Part IV

The Experiences of Stigand

IN THE last issue we touched on the vast experiences of Frederick C. Selous with rifles on the game of the world. There is another British sportsman who has had almost as much experience, although it has been confined almost entirely to Africa. From it we can glean much information as to the proper bullets for big game, and we see that he, too, much preferred the long, heavy bullet at medium velocity to the light bullet at high velocity. His experiences still further confirm the principle that bullet weight should not be sacrificed to velocity if real reliability is to be desired.

Africa early claimed Major Stigand for her own, and before he was killed in a native uprising in the southern part of the Anglo-Egyptian Soudan in December 1919, he had labored in her interests for nearly twenty years in positions of increasing responsibility and honor. He received his school education in England, and after being gazetted to the Queen's Own Royal West Kent Regiment in 1889, served for a short spell in Burma. From there he was transferred to Aden, and in 1900 was selected for special service in Somaliland, where trouble with the Mad Mullah was beginning to assume serious character. Later came service in the King's African Rifles in Nyasaland and British East Africa, and some of the fruits of the avocations of these years may be found in his two books "Central African Game and Its Spoor," and "The Game of British East Africa," two of the very best and most instructive works on African hunting. Also about this time he wrote "Hunting the Elephant in Africa." A year's leave in 1908 and 1909 gave opportunity of carrying out a long-cherished ambition, a journey of exploration through the northern parts of the East African Protectorate into Abyssinia, and resulted in "To Abyssinia Through an Unknown Land." In 1910 he became attached to the Egyptian army, and subsequently he saw extensive service in the Soudan, rising to the position of provincial governor.

In all of this service he had most exceptional opportunities for hunting, a sport which he indulged in on every chance. He was a continuous contributor to the London Field, and wrote many articles on hunting in Africa and the proper weapons, cartridges, and bullets for such shooting. He could not do things in a perfunctory way. He believed in and acted on the principle of doing with all his might whatever came to his hand; and in order that he might do so, he wanted to know all about everything. While thus primarily a soldier and administrator, he had no narrow conception of his duties, but combined with them and pressed into their service his experiences

and studies as traveller, sportsman, naturalist, hunter, rifleman, ethnologist, and historian. The following extracts from his writing give his latest views on the subject under discussion:

"The rifle is the most important part of the hunter's outfit, and so much really useless information has been written on the subject, there may still be room for a short chapter on it."

"In the days of Harris, Gordon-Cumming, Oswald, and Baldwin, the usual weapon for ponderous and dangerous game was a heavy bore muzzle-loader, sometimes smooth, sometimes rifled. Oswald's favorite weapon was a 10-bore smooth, double-barrelled Purdy with a rifle back-sight. With it he killed many elephants, rhinos, and lions. Gordon-Cumming also used a 10-bore rifle by Dickson, Edinburgh, and, like Oswald, he did good execution with it, but it is only necessary to read his book 'Five Years Adventures in South Africa,' to see that it was by no means infallible, for he mentions putting 57 bullets into an elephant, taking from 11:30 A. M. to sundown to kill it. Baldwin and Harris also used muzzle-loaders. In the later days Sir Samuel Baker and F. C. Selous, who began their sporting careers with old muzzle-loaders, lived to see and use more modern weapons, and in Selous' case the still more modern Cordite and other high velocity rifles. Baker's favorite weapon was a double .577 Express, and he was a great believer in the solid bullet as opposed to the exaggerated form of hollowed-out projectile. He considered that a soft lead bullet, driven by a large charge of black powder, quite powerful enough for soft skinned dangerous animals, such as lion, tiger, bear, and leopard, and so it was, but almost unnecessarily powerful. Using a solid hardened bullet he killed elephant, buffalo, rhino, etc. Even this he did not consider powerful enough for the largest beasts, for he strongly recommended the use of 4, 8, and 10 bores for such animals.

"Selous, starting off with the old four-bore smooth guns the Dutch called 'Reer,' killed elephant, rhino, and buffalo, but he has mentioned in his book, 'A Hunter's Wanderings in Africa,' how much his nerves were shaken with these heavy, hard kicking weapons, for the powder was simply thrown in by hand, and in one case his native companion loaded a gun twice, as the cap had only snapped the first time. On trying the gun a second time it went off, and Selous mentions 'that he went off too.' Later on Selous took to the .450 Gibbs-Metford, and did good work with it, using cartridges loaded with 100 grains of powder and a 360 grain bullet for all buck, lion, leopard, etc. This bullet had only a small

hollow, not more than a third of the length, which is the reason it was so efficient. For elephant, rhino, buffalo, and hippo he used a cartridge loaded with 90 grains of powder and a bullet weighing 570 grains. Lately he has taken to the .303 and .256 Mannlicher, and has written a considerable amount of praise of these small weapons. F. Vaughan Kirby is still a believer in the .461 Gibb-Metford, and heavier bores for the largest animals. Neumann, a sportsman of great experience, and who wrote a book called 'Elephant Hunting in East Equatorial Africa,' used a .577 and .461 until he tried the new .303. He mentions how efficient he found this weapon against elephant and rhino and says he would never go back to the old black powder weapons with their smoke, noise, and fouling.*

"It is a noticeable fact that most of the men who have had the greatest experience have been the first to appreciate the benefits of modern rifles. The people who are the most adverse to them are men who have shot their game with the old black powder weapons, and without having properly tested the powers of the new weapons, at once condemn them. The advantages of the new rifles are as follows:

1. Flatter trajectory (due to greater velocity).
2. Absence of smoke and noise.
3. Slight recoil.
4. Lightness of rifle and ammunition.
5. Greater accuracy (especially at unknown ranges).

"A great deal of the success to be found in the use of these weapons depends almost solely on the use of a proper form of bullet. If one uses an expanding bullet on an elephant's head, one naturally would not expect to kill it, or a solid bullet placed in a buck would likely lead to its getting away. There will always be a great difference of opinion amongst sportsmen as to the best bullet and the best type of weapon. Even when the bore has been decided on, there is some difficulty in choosing, for rifles can be made in double, in magazine form, or as single loaders. Most men who carry a rifle throughout a hard day's

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*[NOTE.—Neumann used full-jacketed bullets in his .303 for elephant. East of Lake Rudolph he was finally almost killed by a female elephant that he had wounded with the .303, and whose charge he was unable to stop with this rifle. As a consequence he was laid up in camp with only his native servants for over four months, over a thousand miles from a doctor. After this expedition, Neumann obtained a pair of .450 Cordite elephant rifles, and considered them far superior to anything that he had previously used.—Whelen.]

TINKERING AND TAMPERING

By L. Jacob



THE muzzle blast from an early model nickel plated Smith & Wesson revolver started the whole thing. Then came the big idea—born of reading all kinds of dope, such as questions and answers, Whelen's book on "Amateur Gunsmithing"—that the powder charge in the .32-20 case had insufficient time to burn completely in the 5-inch barrel. The next step on the downward path was the conviction that the weapon must be rebarreled.

Deciding that $7\frac{1}{2}$ or $8\frac{1}{2}$ inches of tube would give the remedy I sought, I wrote to the factory asking what the cost of such an alteration would be. The reply was that as the gun in question was an old and practically obsolete model, they could supply no barrel for it! But by that time, I was fully committed to the idea, and not to be turned from it, wherefore I wrote to Hart-Andrews asking them the same question; also about having the gun blued. Their answer was: Yes, they could furnish the desired new barrel and blue the whole gun, at a cost of from \$35.00 to \$40.00. As I bought the gun some years ago for \$10.00, I naturally concluded, at that time, that the lineal descendants of the James Boys were not all dead.

After receiving the sad news from Hart-Andrews, only two courses of action remained: to leave the darn gun alone, which the "big idea" would not tolerate; or do the job myself, incidentally proving to my own satisfaction whether the job was worth \$40.00.

inches toward the muzzle. This gave me the best part of the barrel to work with and sufficient material to work out the integral base for the front sight. My idea was to make the barrel $8\frac{1}{2}$ inches long. The extra eighth inch which I left on the section of Krag barrel was to permit me centering it on the lathe by using the bore and still have enough to file off the centering bevells when it was finished.

Then I got my drawing board and made a sketch to show how I desired the barrel to be turned in the lathe. I planned to rough turn the entire barrel except that end which screwed into the frame and left this end long enough so that the centering bevel could be filed off and the close fit between cylinder and barrel obtained.

With these drawings, I went to a local engine works, found out who was the most skilled lathe man in the shop, and obtained permission to give him the work. He was a young man and proved to be smart and quickly got my ideas as to the work I wanted done, except that he had some difficulty in finding the combination on his lathe that would make a thread as fine as was necessary to fit the barrel properly to the frame, but he finally did a good job and it cost me only \$2.50. Cheap? So far, yes; but the work was far from finished yet.

I have some tools in my garage and a fair work bench. No machinery except emery wheel, breast drill, and vise. With these and

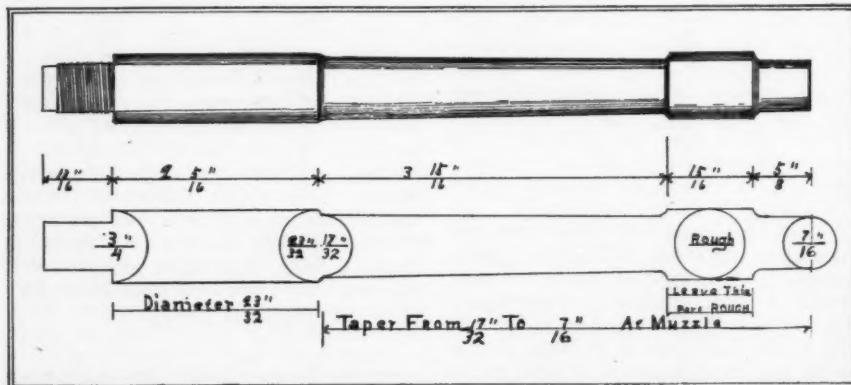
and when I had it so that the cylinder just went in and almost turned freely, I turned my attention to the ejector rod. I had to file room for the rod under the barrel. This done I took the barrel off and opened the rear end with a counter sink, making about a thirty-second of an inch bevel into the bore. Then I screwed the barrel on again and drilled for that little transverse pin which keeps the barrel from rotating in the receiver. I then made sure that there was no burr in the muzzle end of the bore and proceeded to make a temporary front sight.

For this I found a piece of strap iron, half an inch wide and an eighth of an inch thick, bent it around the barrel and put a stove bolt through it, underneath the barrel, similar to the way in which a hose clamp works. I then drilled a little hole in it on the top side and in that hole rivetted a piece of copper something like a shotgun sight and clamped the whole thing on the muzzle end of the barrel.

Seeing what the gun would do was the next problem. I took a few soft point cartridges, some tools, a few yards of building paper for targets, and walked to the nearest woods, about a half a mile away, on my way picking up some pieces of board to tack the targets on. I found a good place on a hillside and set up my target, a piece of building paper three feet square. Into this I stuck an empty cartridge case to give me a point of aim, loaded my new gun and took 20 long steps back and made ready to shoot.

Right here, I confess, I was not able to hold both eyes open. Maybe there were not either of them open, because, after I fired, I did not see where the bullet made any hole, either in the paper or in the snow. Anyhow, I found that the old gun shot, and the big muzzle blast was not there. Also, that it kicked nicely into the center of my hand instead of the upper fork as formerly, and after examining the gun, I found everything as it should be. I reloaded, took aim and shot, and it hit under the target in the snow. This showed my temporary sight to be much too high, so I made a wooden cross and set it so that the intersection of the cross was about 18 inches above the target. Now I took aim at the cross and made a hole near to the center of the paper. A few more shots demonstrated that I was getting a line on how the gun would shoot, and I put up a new paper, made a clear sighting spot on the cross and prepared to shoot 10 shot groups.

The very first group was much better than I ever made with the 5-inch barrel. I shot several groups and they averaged from 6 to 7



I had a Krag carbine with a pretty well worn barrel, which I thought must at any rate be a .31 caliber and which I could lap out to make a barrel for my revolver, as the .32-20 bullet only calibrates .311.

Thereupon I set to work and hacked off a section of the Krag tube at the second rear sight screw hole and made a second cut $8\frac{1}{2}$

a few tools, I do most of my gunsmithing, and so undertook to go through with the work I had planned.

The first thing I did was to put the cylinder in the frame and screw the barrel home, which showed me that it was a good sixteenth inch too long. This I started to take off with a good six-inch flat file, trying the cylinder often

inches off-hand, and I thought that was good enough to start with.

Then I happened to think about penetration. There was an old furnace dock on my way home with some hemlock timber loose, and I took two of the 2 x 10 planks, set them up and shot with soft point bullet. It just went through one plank. I shot three times and the result was the same. I picked up the bullets and an examination proved to me that the bore of my gun was too tight, because the bases of the bullets were so much cupped, and every land made a decided burr into the base of the bullet.

Next day I went through Whelen's "Gun-smithing," posted up, and prepared to do some lapping. I found a piece of steel rod one-quarter inch in diameter, put about three inches of thread on one end, screwed the nut down on it as far as it went, put an iron washer over the nut, and then I made a wooden handle something like an auger handle about ten inches long. On it I easily slipped my rod, then put the washer and double nut, in order to tighten and still leave the handle free to turn loosely on rod.

I cut my rod twelve inches long, measuring from handle, and filed it square for something like five inches, leaving the tip round, but making the shoulder sharp and square where the round ended. Then, with a sharp chisel, I made some barbs on the square part, to hold the lead slug better.

I then unscrewed my barrel, cleaned and oiled it, wrapped some cotton waste on my lapping rod—onto part next to square in order to keep the lead from running through—pushed the rod into barrel from rear end, only far enough to get in the waste, then removed the handle from the rod.

Setting the rod and barrel perpendicularly, muzzle up, in a big milk can that was full of sawdust, I put it near the stove and made sure that it was plumb and straight. I then made a big fire in the stove, put some lead into a ladle, and cast my lapping slug. I was not successful the first time, but I warmed up the barrel a little and then made a nice job.

That done, I put a magazine around the barrel to prevent marring, and fastened it into the vise. I had some flour emery and sperm oil, and kept pushing and pulling my lapper, adding oil and emery now and then, till I thought it was enough. I marked my slug so as to know which way it was, in case that I had to put it in again.

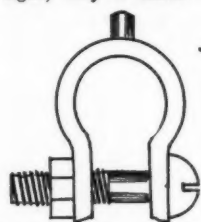
Then I cleaned the barrel, screwed it into frame, got some full patched cartridges and made ready to shoot.

Cut five pieces of 1½ inch pine boards and set them on the work bench in my garage, then put up the sighting apparatus the same way as I had it in the first trial, and shot at a fifteen foot range. Yes sir; the bullet went right through those pine boards, through the garage wall (hemlock shiplap and pine siding) and into my neighbor's garage wall, far enough to stick. It may be made looser yet, but making it looser might spoil the accuracy, so I left it alone.

Next, I hack-sawed the plunger latch off the old barrel, made a dove-tail groove for it

lengthways in the new barrel in such a way that it may be driven in toward the muzzle, and happened to make it so that it lined exactly with hole on ejector rod. It surely was a job with small latitude for common hand tools!

Now, I took a small round file and filed a groove on both sides of my front sight base. At first I left it almost as wide as the barrel, and worked it down very similar to the front sight, only I made it much smaller at the



Temporary Front Sight

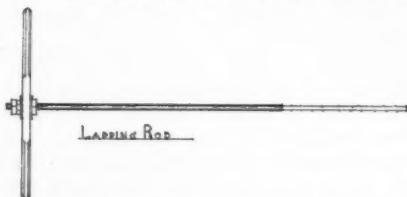
base, still leaving the set-screw on it. to this I had a sight fitted which I bought from a local sporting goods store for fifty cents and my gun was again ready.

This time it was really ready for final targeting, only it wasn't polished and blued, but I was in a hurry to see how it behaved in real shooting.

I took two boxes of full patched cartridges, some tools, targets and gun, went into the woods and located myself in a good place. This time I made a 25-yard range, kept on shooting, filing and moving the front sight, till I was able to keep it near center of paper.

Then I tacked the 50-yard standard small-bore target on, but I had to spoil several targets before I was good enough to keep all ten shots within the rings, and the best I made that time was a group 4¾ inches for twelve shots, (two cylinders full) and the axis of the group was an inch below the axis of the bull's eye, strictly offhand; I am not the nail driving shot, only a common everyday one.

My little experience has taught to me that the handgun must be targeted with one hand, that it will not shoot to the same center with



two hands, and again, if I try to shoot with the left hand, it requires a different sighting from a right-hand targeted gun.

Now, I cannot say what caliber my gun is, but before I started to smooth the barrel I stamped it "32. W. C. F." with one-tenth inch stamps.

Dressing up the gun remained, and I started to smooth the barrel with fine file first, strips of emery cloth next, and finally polishing with flannel and rust remover, so that there were no tool marks left, unscrewed it from the frame, and wrapped it into oily flannel.

Now, I took the frame and lock mechanism all apart, wrapped inside pieces, also hammer and trigger in piece of cloth and put them

away with barrel, I wanted to leave the hammer and trigger in their original color (steel gray).

I made several scrapers of the old files and started to scrape, file and rub the nickel plating off. After a couple of nights working on frame and other parts, they began to look ready for blue, and I sent for a bottle of Hoffman's 20-Minute Gun Bluing. After several days waiting I received the bluing, tore off the wrapping and found the bottle and directions how to use it.

In a little while I committed those directions to memory. I bought three pairs of new and washed flannel gloves, then I wiped and scrubbed all of my gun parts with steel wool and clean rags, put corks in all the cylinder holes, plugged the barrel, and made wire handles on most parts to handle them with.

Then I made a good coal fire in my kitchen stove, put some water, and a whole lot of lye in the porcelain lined stove reservoir, and boiled all my gun parts for five minutes. When I lifted them up they dried without wiping. I had a dishpan, full of clear water, and a wide mouthed bottle tied with wire on to one of the handles of the pan, in such a way that the bottle was in water also. I put some solution into the bottle and made a swab by fixing a piece of old cotton on the end of a stick of dry spruce.

Now I was ready for the job. But I was most afraid that twenty minutes would be too short. Anyhow, I started at 10 o'clock A. M. I had a good fire and everything in shape, no one was home but me. I put on a pair of gloves, had lots of clean old cotton rags handy, and plunged my barrel into that furiously boiling water, left it for two minutes, lifted it up and wiped it dry (and it almost dried itself), swabbed it with bluing and put it into the water again to boil one minute, lifted it up again and wiped it off (this time red rust). After I had wiped it I put it into the water again for one minute. Then I lifted it up, wiped, and swabbed it again with solution. Boiling and swabbing this way, I was surprised how nice a job I made with five coats of bluing and a final coat of linseed oil.

Next came the frame, and as soon as I swabbed the first coat of bluing, it looked like a spotted fawn, because of some of the nickel plating that was there, and I tried the rest of the parts the same way. The cylinder was as bad as the others. I had to cool off my cookings, start to scrape and rub some more. Next day I was sure that there was no more nickel and started to do some more bluing. But still the first coat of bluing made me feel sorry that I didn't give the job to Hart-Andrews. Then I just put one coat on all the parts, to show where the nickel was, cooled my cooking again and started to file and scrub some more. Now I was trying to do it so that it would be the last time.

I put new solution into bottle, new clear water, and was trying to see that everything was right and clean. There was no more nickel, but somehow I was not able to make such a nice job as I did with the barrel. And I put on as much as seven coats, but still it

(Continued on page 13)

International Free Rifle Shooting for 1924

By Major L. W. T. Waller, Jr., U. S. M. C.

THE interest of the shooters in general in the United States in Free Rifle Shooting has increased enormously in the last three years. During that time this country has come to the fore in this type of shooting, and it can safely be predicted that this interest will grow as time goes on until we have a large number of devotees; comparable at least to the old Schutzenfesters, the fore-runners of the present day Free Riflemen.

The increasing interest in this game may be partially laid to success, bearing out the old adage that "Nothing succeeds like success." In 1920 we won the Olympic shoot, one of our team members, Sergeant Morris Fisher, of the Marine Corps, winning the Free Rifle World's Championship with the Military Rifle. Our National Rifle Association became affiliated with the International Shooting Union—what might be termed our International Rifle Association; and in 1921 we sent a team to France to participate in the International matches held under the auspices of this Union. This team, owing to lack of time, was formed by arbitrarily selecting shooters of known past good performances, and no try-out was possible. They were successful, as is well known, and brought back with them not only the Argentine Trophy—emblematic of team championship in Free Rifle Shooting, but also the Individual Free Rifle Championship. Both of these events were hard blows to the Swiss, who had for years been the leaders in Free Rifle Shooting, and had been accustomed to winning all events as a matter of course. In 1923 we had more opportunity to get out an American team, tryouts were held at Quantico, Virginia, and thirty-five men appeared for this weeding out process. The team shot themselves into position much the same as the year before; that is, it was composed of about the same members which, while it vindicated those of us who had selected the 1921 team, was not entirely satisfactory. New blood is essential to the continued success of the shooting game, and we were not getting it.

Compare our thirty-five contestants at the Quantico tryouts with the two hundred odd men the Swiss had at Milan in 1922, and the comparison does not indicate much cause for cheerfulness on our part. However, it will be remembered that our little seven men, after a heartbreaking trip across Europe, took the bit in their teeth and won from the Swiss again by a slender margin. Mr. Walter Stokes, civilian of Washington, D. C., again won the individual world's championship, and thereby convinced the Swiss that our 1921 win was not a fluke.

1923 was the year we were to have the Matches on our own grounds, and we looked forward to having a fine representative lot of teams to uphold the shooting reputation of the old-world nations. The history of the 1923 International Matches at Camp Perry is now

written and we see no foreign teams there. The adverse rate of exchange is given as the reason for their non-appearance. Be that as it may, the shoot as an International affair was a distinct failure. There is only one bright spot in it, and that is the interest and scores put up by the rapidly growing clan of Free Riflemen.

Data is not at hand, but I estimate that about one hundred and twenty-five men took part in the regional tryouts—of these about thirty-five were sent to Camp Perry to take part in the final tryouts. These were augmented to fifty by the shooters at Perry who had not participated in the preliminaries. The squad of fifty was finally weeded down to eighteen men, from which this year's team was picked. The squad was purposely kept large to give the men a chance to practice and learn the free rifle game, and the members of this squad of eighteen are authorized to participate in the final tryouts for the 1924 team, without participating in any preliminary tryouts.

The first five men composed the firing team and fired the course for record, making the scores given below. This shooting was done according to the rules of the International Union, the targets being judged by a committee of that Union, consisting of a Frenchman, a Hollander and an American, so that the scores are official.

The 1923 team broke the previous record held by the Swiss since 1912—previous record scores being given for the purpose of comparison.

Very frequently men who are interested in shooting and who do quite a lot of it in clubs are excellent material for our International Teams. Possibly not the first year after they try to break into the game, because the game is very fast and there is much to learn, but with a little experience they would make serious contenders for team places. This year's team had one man on it who had not shot before in any except club shoots, and one man who failed to make the team by only a few points, and these missing points were as much

1923 Free Rifle Team

Team Captain, Maj. L. W. T. Waller, Jr., U. S. M. C.; Team Adj., Lt. Com. E. E. Wilson,

U. S. N. Alternates: Private Dennis Fenton, U. S. A., Mr. E. N. Moor, Jr., California.

Shooting Members

	Standing				Total		Kneeling		Total		Prone			Total			A'gate
Fisher	86	81	87	84	338		94	90	88	95	367	96	96	97	96	385	1090
Stokes	78	83	85	88	334		91	88	90	89	358	95	93	96	93	377	1069
Nuesslein	88	88	85	80	339		88	94	85	85	352	95	93	89	94	371	1062
Bales	83	87	80	85	335		83	82	88	84	337	94	94	97	94	379	1051
Osburn	82	76	86	82	326		86	80	84	81	331	95	93	91	93	372	1029

TEAM TOTAL

1672

1745

1884

5301

TEAM AGGREGATE..... 5301

Prior Team Record—5172, made by Swiss in 1912.

Prior Individual Record—1076, made by Stahli (Swiss) in 1912.

Individual Standing Record—348, made by George (France) in 1914.

Individual Kneeling Record—367, made by Fisher (U. S.) in 1923.

Individual Prone Record—385, made by Fisher (U. S.) in 1923.

Team Standing Record—1672, made by United States in 1923.

Team Kneeling Record—1745, made by United States in 1923.

Team Prone Record—1884, made by United States in 1923.

As a matter of interest the names of these eighteen men are given below, the first seven are those who constituted this year's Free Rifle Team.

Sergeant Morris Fisher, U. S. M. C.
Major J. K. Bales, U. S. A.
Commander C. T. Osburn, U. S. N.
Mr. Lawrence Nuesslein, Civ., Wash. D. C.
Mr. Walter Stokes, Civ., Washington, D. C.
Pvt. 1st Cl., Dennis Fenton, U. S. A.
Mr. E. N. Moor, Jr., Civ., San Francisco
Mr. J. P. Becker, Civ., Dundas, Minn.
Capt. E. G. Lindroth, U. S. A.
Capt. J. W. Thompson, U. S. A.
1st Lt. A. M. Siler, U. S. A.
Mr. A. F. Goldsborough, Civ., Pasadena
Sergeant Frank Joeger, U. S. A.
1st Lt. H. C. Barnes, Jr., U. S. A.
1st Lt. A. D. Rothrock, U. S. A.
Capt. A. R. Brian, U. S. A.
Mr. C. T. Carney, Civ., Des Moines, Ia.
1st Lieut. Trichell, U. S. A.

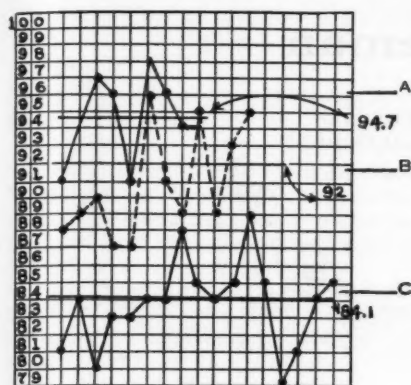
due to an accident as to any other cause. Several times I have been asked what scores are considered good by men who are shooting well, but who do not believe their scores are good enough. To answer these questions and to provide a ready reference for those interested, the following scores are published. These scores are based on eighteen men who finally made up the Squad after having been cut to that number from fifty.

Average of the final high man, first three days shoot:

Standing 82.5
Kneeling 89.3
Prone 94

Average of same man last three days:

Standing 83.8
Kneeling 92
Prone 94



GRAPH A

A.—96.2 Match Average; 94.7 Practice Average, Prone.
 B.—91.7 Match Average; 92 Practice Average, Kneeling.
 C.—84.5 Match Average; 84.1 Practice Average, Standing.

Average of 18th man on Squad, first three days:

Standing 75.3
 Kneeling 80
 Prone 89

Average of 18th man on Squad last three days:

Standing 72
 Kneeling 81.5
 Prone 93.6

Average of practice scores of the members of the 1923 team for the entire tryout. Compare these with their match scores above:

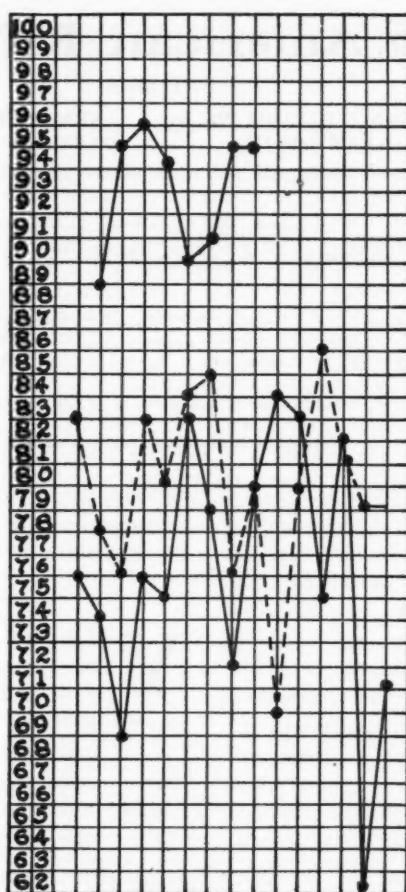
	Standing	Kneeling	Prone
Fisher	83.7	90.7	94.4
Stokes	81.9	85.1	92.4
Nuesslein	83.0	83.8	93.5
Boles	83.0	86.8	93.1
Osburn	80.3	86.8	94.1
Moor	80.1	84.0	92.8
Fenton	79.5	84.8	92.5
Squad average	81.6	86.0	94.7

The graphs herewith are given to show an excellent method of keeping scores. By the graph system, a glance is all that is necessary to show whether a man is improving or slumping; whether he is an "up and downer;" or whether he is a consistent shot; and whether he is weak in any one position. Every one can plot his own shooting and see at all times what he is doing, and in what part of the game he is weakest.

A comparison of these graphs readily shows what each man is doing, and it is not necessary to wade through a mass of figures to find out all there is to know.

As before stated, the eighteen men of this year's squad are authorized to take part in the final tryouts without appearing in any preliminary tryouts. An effort will be made to have preliminary regional tryouts for the 1924 team in ample time to have a final tryout in some central place and to put the squad into training before sailing for the Olympic Games.

The United States raised the record this year and set a new standard for ourselves, which standard we must live up to or explain how we happened to make it. It will be harder to make the same score abroad than at home, we have the long trip, lack of practice and the shooting on a strange range to



GRAPH B

Upper, prone; Middle, kneeling; lower, standing.

contend with. We can do it with the men we have and can develop—the new faces in the Free Rifle Game must be numerous. There is a lot of potential team timber in the country—Get busy—Train up—using this year's scores as a guide, and break into the game.

The rifleman who decides to enter the lists for team honors this year will find that all arrangements have been made, as outlined in the March 15 number and in addition an added stage has been included in the tryout. This, with other last minute regulations, completes the arrangements for picking the 1924 personnel.

The tryout at 600 yards will be for the purpose of selecting men who may be able to make the Olympic Rifle Team but who, because of lack of practice or interest in the off-hand position, are not able to make the International Free Rifle Team.

The Olympic Team Match is fired at four hundred, six hundred and eight hundred meters and the Individual Olympic Championship is fired at six hundred meters. Conditions permit any rifle, any sights, except those containing glass, and allow the use of the sling. The conditions for the preliminary tryouts call for two sighting shots and twenty shots for record at the six hundred yard range on the B target. Rifle, any. Ammunition,

any. Sights, any not containing glass. Position, prone. Sling permitted. The course to be fired on April 18th, and repeated on April 19th.

These supplementary tryouts will be held at every range listed in the issue of March 15th with the exception of Fort Rosecrans, where a six-hundred-yard range is not available. Lack of funds will not permit the sending of two distinct organizations, one for competition in the International Free Rifle Match and the other for competition in the Olympic Team Match, but it is realized that there are some men who are exceptionally good prone shots, while being but mediocre off-hand performers. In order that these men may have an opportunity to represent the United States at the Olympic Games, the supplementary tryout has been added.

Definite plans for the final tryouts have also been made to be held on the Marine Corps Rifle Range at Quantico. Successful candidates for this year's tryouts as well as the eighteen candidates selected last year, or such of them as can that wish to attend the final elimination match, will report at Quantico on Sunday, May 11th. The 12th and the 13th will be devoted to preliminary practice while the elimination competition will be held on the 14th and 15th. The successful competitors who are designated as the International Team of 1924 will be issued their rifles on the 15th and 16th and will be given two days in which to sight them in and make such minor alterations as appear necessary or advisable to fit the rifle to the shooter. On the 19th team practice will be started and will continue through the 29th. The squad will leave for New York on May 30th, and will sail from that port on the Steamship President Harding May 31st, arriving in France on June 8th.

There will be but very little time for practice after the squad lands in France so that the ten-day period of team practice at Quantico is regarded as absolutely essential before the team sails, and candidates should make arrangements so that if they are successful it will be possible for them to remain at Quantico from the date of the final tryouts until the date of sailing. The team will return from Europe about July 8th on the same ship.

Arrangements have also been made to supply the team with .22 caliber Springfield rifles of the exact weight and dimensions of the .30 caliber rifles. There is only one .22 caliber event on the Olympic program, and that is a fifty meter off-hand match. Funds will not permit the sending of a separate squad for competition in this one match. There will be on the squad when it sails a number of riflemen, however, who are thoroughly competent to take care of themselves in any .22 caliber off-hand match. It would throw these men off their stride, however, if they were asked to shoot the .30 caliber free rifle in one very important match then to switch to an entirely different arm for the .22 caliber event, and finally go back to the .30 caliber guns again for the third big event on the program. In order that they may do full

(Continued on page 16)

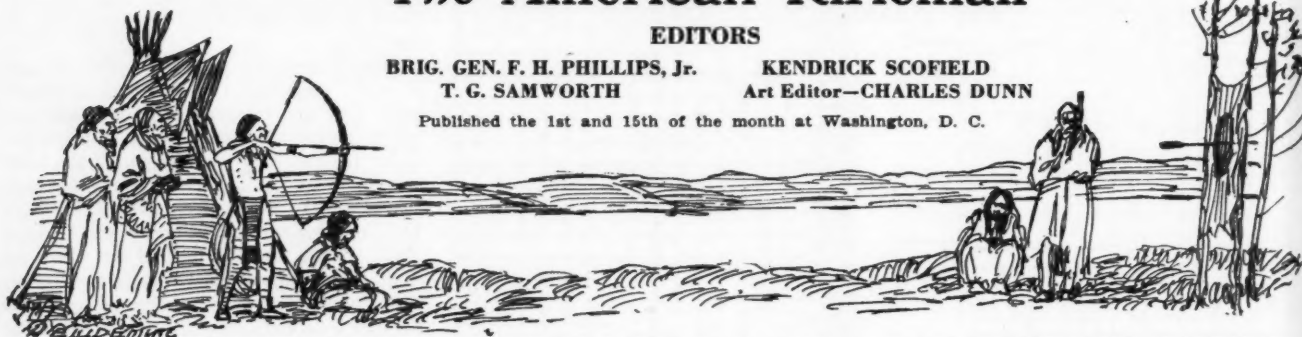
The American Rifleman

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CITING the methods by which the Philippine insurrection of the early nineteen hundreds was suppressed, one of the leading Philadelphia papers calls upon Director of Public Safety Butler to disarm the City of Brotherly Love. Declaring that although General Butler has organized police

"Let Philadelphia Be Disarmed"

squads to hunt down the bands of highwaymen who make walking the streets even in daytime a dangerous thing, crime has not diminished, the newspaper asks: "Has not the time come to disarm the criminal? There can be but one purpose for carrying a pistol, and surely no one would need to carry one for self defense if the bandits were once disarmed. In several States there is agitation for new laws to make banditry punishable by death, and a Philadelphia Judge recently exacted bail in the sum of \$10,000.00 for a prisoner accused of a hold up."

In common with all reputable citizens, we can emphatically agree that the time has come to disarm the criminal. But the disarming of an entire community in order to accomplish this is quite a different matter. The Philadelphia newspaper proposing disarmament of Philadelphia criminals has dismissed with mere collateral mention the crux of the whole question. Disarmament is not successfully accomplished by indiscriminate confiscation. The successful suppression of Aguinaldo's "Little Brown Brothers" was possible, because—to use the words of the old hiking song—we "civilized 'em with the Krag." All of which made rifle stealing and bolo rushes as unpopular as it was unprofitable.

Gun toting with criminal intent among the outlaws of our big cities can be made unpopular and distinctly unprofitable if offenders are brought to trial under statutes providing capital punishment for banditry and before jurists of the caliber of the judge who demanded and exacted ten thousand dollars bail for an accused "hold up."

General Butler and the Philadelphia press will accomplish far more by relentless prosecution of gangsters under laws which have been equipped with teeth than they will by undertaking such a Herculean, thankless and impractical task as the general confiscation of weapons would be.

When an armed gangster is apprehended, put him where he will be safe for a long time. Dispose of them one by one,

and their shadow will steadily grow less. Also, other gunmen, contemplating the fate of their pals, will think twice before they risk similar treatment.

* * * *

YEAR after year, the prestige of the United States among free riflemen has depended upon some five or six old-timers who can be counted upon not only to be on hand when the call comes for an international team, but to come through with honor when they meet opponents on the firing line. All credit to these men who have been and still are the back bone of the free rifle clan in this country.

New Blood

Yet this being true emphasizes the incontrovertible fact that new blood is needed in the ranks of free riflemen if the United States is to continue to play this game, and if this type of shooting is to be of any value other than a publicity channel.

In spite of the efforts which have been made to interest riflemen at large in this field of target shooting, it is amazing how few new men have been added to the roster of International team shots since our first signal success in this field in 1920. It does not follow that our teams would have been any more formidable if ten times the number of candidates had turned out each year for places on the International team, for as it is our teams have proved better than Europe's best; but aside from the mere winning of the international championship titles, whether the game has been worth the candle, is at least open to scrutiny. In consideration of the scope which rifle shooting has assumed in this country, resources available for the promotion of the big general game are too limited to warrant the expenditure of relatively large amounts in training, equipping, and defraying the transportation expenses of international teams. Such an outlay can be justified only when the free rifle type of shooting is an important factor in the promotion of rifle practice among citizens of the United States. This will not be true so long as a very small coterie of shots alone are concerned with this branch of the sport.

The free rifle game is well worth while. Already it has been responsible for many signal improvements in arms and ammunition in this country. It is deserving of serious and whole-hearted support. But this is possible only through the injection of new blood at the forthcoming tryouts.

An Analysis of Game Bullets

(Continued from page 7)

shooting prefer magazine or single loaders in preference to doubles, for the former are much lighter to carry and, unless the double is made by a really first class maker, are more accurate, for there is great difficulty in making a double rifle shoot the same with both barrels. We should most certainly advise the sportsman to use magazine or single loaders, for, as we have said, they are handier and cost much less, for the best magazine or single loader can be purchased for less than £25, whereas a really good double would cost from £40 to £60. Cordite rifles can be had in all small bores from .256 to .600. The .600's, .577's, .500's, and .450's are made solely for ponderous game such as elephant, rhino, and buffalo. The .400's, .375's, .360's, and .350's are intended for use against all game, but most makers would never think of recommending a man to start away on a trip with only a .303, .275, or .256 Mannlicher, but it is a fact that not only buck and lion, but animals such as elephant, rhino, and buffalo can be easily killed with them, *provided a suitable projectile is used*, and they are hit in a vital part.

The larger bores are certainly safer, especially to a nervous man or a bad shot, but it does not make much difference to the elephant whether his brain has been punctured by a .577 or .256 bullet. When a man has a weapon like a .500 bore cordite in his hand he is apt to think that he has only got to hit the beast to bring it to bag; but this is not always the case, though there would certainly be more likelihood of finding it if only wounded. There is undoubtedly one advantage which the larger bores possess, and that is the quantity of the blood spoor; but in our opinion this is a minor advantage when the handiness and other advantages of the smaller bores are taken into account. The ammunition for the larger bores is much more costly and bulky to carry. At present the .303 cannot be taken into India without special permission, though an officer can pass it as part of his kit; but this rule does not apply to Africa, and .303 cartridges can be bought in a number of stores in that country. There are a great number of fanciful bullets (expanding type) made by gun-makers for the .303, in fact every prominent maker has his own bullet, but we do not think more than two types need be taken, viz., expanding and solid. The best expanding .303 bullet that we know is the Mark V, with a hollow $\frac{3}{8}$ inch deep in the nose, the hole having a slight taper and left open. This bullet is ample for all buck, and for lion, leopard, wart-hog, etc. The solid (full jacketed) is best for elephant, rhino, hippo, and for raking shots at buffalo and eland. The best shot for elephant is the head one, and if the animal is broadside on, a few inches forward of the ear hole in a line with the eye, low if anything. If the bullet strikes here it will reach the brain.

For the .256 and the .275 Mauser the best form of expanding bullet is one with the lead just exposed at the point, with a small hole drilled in the nose. The lead ought not to

project but be cut off flush. If there is a projection of lead and it becomes dented, as often happens in carriage, they will sometimes jam in the breech shoulder of a magazine form of rifle.

Very much depends upon the man behind the rifle, his faith in the rifle he uses, his nerve, the spot the projectile hits, the angle the animal is turned at, and the state of the heart or other vital organs when they are hit. We think people are often too much inclined to praise or condemn a rifle on a few single instances, whereas no two animals or bullets behave in exactly the same way. To quote two instances: we have dropped a charging elephant on his knees at ten yards with one shot from a Mannlicher, and with the same weapon failed to stop a charging lion at two yards. The inference drawn from the first instance is that the Mannlicher is all that can be desired for the most ponderous game, and from the second that the same rifle is utterly useless, even for comparatively small game, neither of which inferences are of the least value unless compared with hundreds of other cases. In the first case, had we had a heavy bore we might not have been able to get in such a deadly shot, whereas, in the second case, with a heavy bore or even a shotgun, the shock of impact would in all probability have turned the animal.

The great advantage of a double barrelled rifle is the rapidity with which a second shot can be got in, which is a very serious consideration in a tight place. The first shot is the all important one, and if this only wounds, the animal must be stopped by sheer weight of lead and blow of impact. For the first shot we wish to use all the accuracy at our disposal, and something that we can always have in our hand through a long and tiring day, hence we advocate a small bore. If after firing this we had an automaton to hand us our big bore it might be useful to have one in reserve to meet a possible charge, but gunbearers are only human, and rather than run the risk of having to look for it up a tree or some yards in rear, perhaps it is as well to depend on your magazine and accurate shooting and save yourself sixty guineas by not having a rifle which may be in the way when you don't want it, and very possibly not available when you want it mighty badly."

Comments. I do not believe that Major Stigand ever intended his writing should be interpreted to mean that he thought a sportsman should pursue thick skinned and dangerous game armed only with a small bore rifle. Rather I think he meant that in the hands of a cool sportsman and a good shot such rifles were suitable for such game because the full jacketed bullet would do the work if properly directed, and there was more chance of such proper direction with a light and extremely accurate rifle. But although he does not specifically mention it, I think that he would most emphatically advise that a sportsman be always backed up by a heavy cordite elephant rifle in the hands of his gunbearer as a sure stopper and as a life insurance. We will see in the next series of articles that such is the advice of still another sports-

man of very extended and modern experience in Africa, adding still more corroboration to the principle that bullet weight should not be sacrificed to velocity, and that a long, heavy bullet is so reliable and such a good killer that it can be regarded as suitable for any big game the world over, provided however that full jacketed bullets be used on thick skinned game.

(To be continued)

Cupro Nickel vs. Gilding Metal

(Continued from page 6)

barrel without reference to the kind of jacket which had been used in the barrel in the previous strings. Each competitor then had introduced into his ammunition characteristics, the characteristics of both the rests and the barrels. This procedure eliminated the chance of one competitor selecting by lot a better barrel than the others.

Tinkering and Tampering

(Continued from page 9)

looked like an old gun that had the bluing worn just a little off the corners.

It looks to me that the nickel plating affects the thin parts right through.

As a whole, my job was more of a success than I really expected at the start, for I have a nice and accurate gun now, and the ordinary man cannot say it was made in a garage.

I own several handguns, but that is the one I most often take with me.

I now have a different opinion of Hart-Andrews' price for said job, because I don't think I made five cents per hour, according to their price of \$40.00—but I gained a lot of experience.

Powders, Barrel Time and Pressures

By Bryon E. Cottrell

RIGHT at the start I want to say that I am not writing this because I know so much about it, but because I would like to find out more about it, and it is possible that if I start the ball rolling, some one may come out and tell us all there is to it.

It has always seemed to me that in speaking of the normal burning pressure of a powder, a certain barrel time should be specified. A powder burning under say 50,000 pounds pressure to give a certain bullet 3,000 f. s. velocity must burn in a rather short time. The same powder loaded behind a heavier bullet at a lower speed of say 2,000 f. s. developing 35,000 pounds pressure, naturally burns slower, but it has nearly twice the barrel time to burn in. It is all perfectly burned under both conditions. Why is this called elasticity? To me it looks as though if the pressure were taken in connection with barrel time, then both loads would be burning under normal conditions, which I think is true, but we don't often see it put that way.

For example take du Pont I. M. R. No. 16—it will burn normally in the .30-06 cartridge when driving a 150-grain bullet at 3,039 f. s. with a pressure of 54,000. It will also burn normally, and without leaving any unburned powder in the barrel, when used in the .30-30 to develop 2,000 f. s. with the 170-grain bullet at a pressure as low as 26,500 pounds to the square inch.

Even when using the same weight bullet in the same cartridge with the same powder but at a different velocity this is true to some extent. For example: using No. 16 and the 150-grain bullet to develop 2,700 f. s. the pressure is 41,940 pounds, with a barrel time of say 1/900 second. The same bullet and powder developing 3,039 f. s. with 54,640 pounds pressure, and the barrel time of say 1/1000 second. That is, at 54,640 pounds the powder has 1/1000 second to burn in, while at the lower pressure of 41,940 it has 1/900 of a second or one-tenth more time.

If this is true, then we should use a much slower powder with the 220-grain bullet if we want the most efficiency at pressures from 50,000 to 54,000 pounds. At these pressures, No. 16 should burn too quickly behind the slower-moving 220-grain bullet; that is, for the very best results. However No. 16 will give this bullet a velocity of 2,350 f. s. But would not a load of either No. 15 or No. 10—enough of it used to give pressures of 52,000 pounds, burn a little more evenly and give a velocity of 2,450 to 2,500 f. s.? The load of No. 16 burning with the rather long barrel time at a pressure of 51,000 should be a fine load for a short barrel.

The figures I have given for barrel time are only a guess, and just used to illustrate the point, they may not be even near the correct figure.

Now about pressures. I have often wondered if in taking pressures with a crusher, said crusher is subjected to say 60,000 pounds for a comparatively short time—while a 110-grain bullet (.30-06) is getting started off at 3,700 f. s. Would this crusher record all the pressure in that short time? The same as it would if the same pressure were starting a much heavier bullet off at say 2,200 f. s.? To me it seems that the time that the pressures have to act on the crusher would have a lot to do with it. Of course, I know the highest pressures are reached quickly and maintained but a short time, probably not longer than while the bullet is moving one inch—possibly even less than that.

If the pressures do go higher in the extremely high velocity light bullet loads than is recorded by the crusher, I don't see that it makes any particular difference with the best bolt-action arms, as I understand that any of our good bolt guns would easily stand continuous shooting of loads developing 60,000 or 65,000 pounds pressure if we were sure the primers and cases would stand it. If the pressures are of such short duration as not to register full value on the crusher, then surely they will not on cases or primers. If this is true they are safe enough anyway—for bolt-action arms.

Binocular Ballistics and Interior Bullistics

By C. C. Finn

WHY do we shoot with one eye tightly squeezed up and thus not only destroy the looks of our handsome phizzes, but likewise subject us to involuntary performances when sighting something along the avenue, said involuntary performance leading to our pure motives being questioned? The answer is that this is the right way (to shoot of course, not to involuntarily perform on the avenue) and has always been so. Well, I tried out the both-eyes-open idea, because our avenues are filled with objects worthy of sighting, and besides one eye isn't enough with the styles the way they are. Getting back to indoor pistol shooting, holding one eye tight shut during a whole evening is a strain which is not justified by results. When I first tried using both eyes I had the devil of a time, as I saw two targets and tried often enough not to play favorites but put a careful shot exactly between them. This is the third season and I have at last taught my left eye to run away and play and not interfere whilst me and me right eye are a-shooting, and she works, mates, she sure do. My avenue habits have improved and I see things I never dreamed of before. Besides that I find that when shooting I can by closing the left eye achieve a momentary but decided increase in clearness of vision, and this is most valuable to have up my sleeve. The increase is only momentary and a continuation of closed left eye brings back the old fuzz to the target.

The next question before the house (Huh? I absolutely settled the two eye idea in the paragraph above, don't interrupt) as I said, the next question before the house is why do we aim at 6 o'clock. Sure I have a Rifle Marksmanship, an American Rifle by Towney, a Marine Corps Score Book, and a lot more books and they all agree that 6 o'clock is the place to hold and that all decent folks do so. The Marines hold into the bull, and some of them at the top of it and that confirms a lot I had thought of them. But now why DO we hold at 6 o'clock and expect the bullet to strike way above where we are looking? It seems to me that if the bullet is expected to strike say 16 inches above the aiming point, a cant would result in the bullet being deflected along an arc of a 32 inch circle which would not be the case if the aiming point and striking point were the same. Looks like it should be, but it might be only my "fawncy" as the lady said when she thought she smelled a bad smell. Of course we shoot as we do to be different from the mighty hunter who holds 'em where he want 'em to hit, so he will have only one spot to watch, and then we can get him on the range and make a monkey out of him, and thus bring sorrow to Wm. Jennings Bryan.

Now the indoor pistol has given me all the gray hairs which adorn my otherwise handsome head and the main reason is that I don't see the bull, that is, not just when I want to. Hold with care, get a nice, thin, white line, and then start to struggle with the trigger. White line grows whiskers, bull grows whiskers, they mingle, and then all of a sudden they show up clear and I have a nice, low, left shot. How come? Well, first off the white line gets whiskers, and my eyes slip a word to the old elbow, "Drop 'er a little, buddy, so we can see." Think they don't? Just ask any doctor or psychologist how far your eyes can go in spite of you even off the avenue; up there of course that's different. Well that happens and just about then the old wrist begins wondering if suicide is a crime and has a reflex. Yes you have and that's not all you have either Mr. Reader! The first reflex is a slackening of the elbow and a sag of the wrist and their resultant (got that out of the kid's physics book, and it means the path followed by an object free to move and acted on by two different forces at an angle to one another) helped by old man Gravity, is almost always toward 7 o'clock. When all these get through the front sight is far enough below the bull so the latter is easily seen, and the terrible disaster noted above has happened and there is an irretrievable hole in the paper out of the black in the 6-9 quadrant. Your first reflex may be different but you bet your boots you have one. Suppose you see all this just as you have gone too far with your trigger? You tighten up "convulsively," (gosh, I got hold of some grand words this trip), and you chuck one in the 12-3 quadrant, but mostly at 2 o'clock, and mostly pretty wild, because the movement is sudden. If you are a good shooter you back away from the trigger and start afresh.

Well, how about interior bullistics? If you hold into the black all the time and you are sighted to hit where you hold, you have much less territory to cover than holding at 6 and watching all the time that you are just at 6. You have no white line to get whiskers, and if the bull does get whiskers, let 'er, so long as you are in the midst of them. Incidentally if you hold a pistol into the black and stay in you are holding better than you ever averaged in your life, and that goes for most of you. The hold in the black requires you merely to notice when you wobble out, and that is much more easily seen than when you wobble in from a 6 hold. Haven't made much headway with this with the rifle, but it has helped with the short gun, and I know it will with the other, if I can ever get the nerve to run counter to all the books I mentioned to begin with. Try 'er out, brother, and whatever you do, don't reflex.

Handguns to be Left at Home

By Dr. E. W. Paine

THE hand gun, admittedly, was designed and developed as a homicidal weapon. Admitting this, let us dismiss that phase of its use from further consideration in this article. Hand guns have other legitimate and far more interesting uses. As playthings to be used for target work in settled communities they have few equals, they are so easily carried, so unfailingly dependable and offer such a limitless field for the development of skill. The mere possession of one of the works of art turned out by the best makers fills one with joy, they are so perfectly designed for the work to be done, so compact, so well balanced, so beautifully finished. It is not of the target gun, however, that I wish to speak, but of the gun which to me answers the requirements of an "all around" gun.

I approach this topic apologetically, for I am as well aware as the next man that there is no such thing as an "all around" revolver. I wish merely to state what my requirements are and how they are fulfilled.

I go into the woods of Northern Maine about every fall, selecting my time so that I will be just in on the last of the fishing, that means about the middle of September. Partridges may not be legally shot before the first of October, so understand that we are using our gun on hypothetical game only. Now what I want for a shooting iron on these trips is a gun with punch enough to pull down a deer and with accuracy enough to hit a partridge in the head or neck at short range. That is my idea of an "all around" gun. How is it to be realized?

First, clear the board of all strictly target guns, guns of the 38 special class with 7½ inch barrels and moveable sights, don't consider them. The 38 special for our work is neither the one thing nor the other. A 22 will do anything a 38 will, and do it cheaper and better, both have marked accuracy and neither has any punch. What you want is the heaviest cartridge you can get in the most compact gun and if you can't shoot it about as well as you can a 22, you are constitutionally unfitted to use my "all around" revolver.

Get a gun with a barrel not over six inches long, five and one-half is better, and with fixed, not moveable, sights. By using fixed sights you will once and for all get out of the pernicious habit of trying to line up the sights to suit your holding. Sights need no adjustment up to fifty yards and after that revolver shooting is 10% skill and 90% luck. Find the gun that fits your hand, for what fit and hang is to a shot gun or rifle, the grip is to a revolver. Try a lot of them, and when you find one that feels just right, grab it.

The grip of the Colt Single Action suits me. It feels better in my hand than his father's doorknob felt to the prodigal son. This gun is made in the large calibers you want and is

my idea of one of the perfect guns. I refuse to admit that it could be bettered.

The Smith and Wesson model 1917, using the government 45 automatic cartridge, is another weapon hard to beat. The grip suits me, and while I have heard it criticized, I would not hesitate to recommend it.

As for cartridges, I believe the 38-40 with hollow point lead bullet is the most powerful that can be used. It is said to be not as accurate as some others. If you ever get to realize the accuracy possibilities of this cartridge in a revolver, you will be subject for congratulations. Stick to full loads, it is just as easy to accustom yourself to the use of a full load as any other and after all is said the heaviest is small enough.

Just one more thing: When you have selected your gun and packed it up ready to take into the woods with you, forget it and leave it at home.

I went through the Allagash this September and carried a revolver which I am proud to say I didn't discharge once. We spent a week on Allagash Lake. The Allagash river trip may not be what it once was, and, as the fellow said, "it probably never was," but Allagash Lake is still the premier wild lake in Maine. Its waters are clear and its shores high, bold and forest covered. When you are on its surface you seem to be, and in fact are, high up in the air. It is full of fish and contains among other fine ones the romantic "white fish," indigenous only to cold and far northern waters.

As I said, we spent a week on the lake and while there saw no other parties. We did, however, have daily visitors. One evening I took several trout and white fish on a fly and putting them into my landing net stuck the handle into the roots of a down tree, so that the bag of the net swung five feet clear of the ground. In the morning when I went down to wash, there was a mink in the net eating whitefish as though he thoroughly enjoyed it. He climbed out of the net when I got quite near and taking up a strategic position under a log, cussed and spit and behaved about as one of us would if our breakfast was removed just about as were were enjoying it. This mink was in sight about the camp most of the time. He cleaned up all the fish refuse and made himself so neighborly that we left him with regret.

We expected no such luck again, but on our second camp site as we sat after breakfast looking the domain over, a mink came out on the shore about twenty-five yards down wind from where we were sitting, near where we had beached the canoe. We had cleaned some fish and part of the refuse was on the sand and part under water. The mink sniffed up the breeze until he came to the place where the fish were cleaned.

He carried off every bit of the offal on shore and then under our eyes began to dive and retrieve the fish heads and refuse under water. He found every piece, some of the toggle heads were large and he had the dickens of a time getting them up to his lair in the rocks. He tugged and rolled, part of the time he was on top of the head and part of the time it was on top of him; we sat and watched him, and after it was all over, had a good laugh. This mink was around the camp all the time he stayed there, and was about as tame as a house cat. We both said that if we ever got the chance we would raise a mink for a pet.

Now the only reason we saw these mink was because we discharged no firearms, and what is true of mink, is true of other game as well. A revolver on a trip of this sort is a lot of bother, is hard to keep from rusting and means extra weight. It is a temptation to break the game laws and, take it all in all, my parting advice is to leave it safely at home.

Bullets in the Peacemaker

Continued from page 5)

fire with it and Bull's Eye, and only one squib when used with du Pont No. 80. The King's "Semi" used was of F. F. G. granulation. Moulds for any of the bullets can be procured from the makers. I have cast bullets for only one caliber in my life—the .32-40 Winchester. It was lots of fun, but when spare time is scarce, I would rather spend it shooting outdoors, and prefer to buy my bullets ready made. So far I have bought bullets from Ideal, Bond, and W. A. Clark, Colton, New York. My dealings with Mr. Clark have been both pleasant and profitable. He is courteous and interested in your problems. He calls himself a "pistol lunatic," and is willing to test things out on his own shop range, and being a capable gun crank, this counts a whole lot, in securing service.

Out of the thousands of shots and the great variety of loads I tried with the .45 Colt single action, I have picked a few favorites. For tin can can shooting give me the 190-grain Bond and du Pont No. 80. For a super accurate slow fire load at the conventional ringed target give me Schuetzen and the 260-grain Bond seated one band out. For regular fifty yard shooting at a stationary target, Bull's Eye and the 235-grain Ideal hollow point would suit me O. K. For general field work nothing could compare with this same Ideal bullet and a good charge of King's "Semi," and a few grains of Scheutzen priming. For a reliable short range HE-load the same load, minus a few grains, and the 260-grain Bond bullet. Du Pont No. 5 is left out on account of inexperience. I hope some one who has been able to obtain this powder would try it out in the Peacemaker and report the results.

Note: No claim is made that targets shown represent absolute accuracy of Peacemaker and the different loads. They merely serve as a comparison. They do not portray the best groups secured, nor on the other hand, the poorer ones, being just typical examples of good average results. An expert could probably have gotten as good as these with the same loads shooting off-hand.

International Free Rifle Shooting for 1924

(Continued from page 11)

justice to themselves, these special .22 caliber rifles with thirty inch barrels and made up to the same weight and dimensions as the .30 caliber rifle, are being prepared and will be ready for issue to the team when it sails. It is felt that with this equipment, the rifle squad will be in a position to do its full share toward pulling the American Colors from the position in the Olympic race to which they have fallen as a result of our poor showing in the winter sports.

In connection with the tryouts for the International and the Olympic free rifle teams, a tryout will also be held for the running deer team. In the running deer matches any rifle may be used provided that both front and rear sights shall be open and uncovered, and the trigger pull shall not be less than one kilogram (2 1/5 lbs.). Set triggers are prohibited. The ammunition may be any not having explosive bullets. The target is a life size silhouette of a running deer divided into zones counting 5, 4, 3, 2, 1 and 0. The 5 and the 4 zones are concentric circles just in rear of the shoulder and are 15 and 30 centimeters respectively (approximately six and twelve inches) in diameter. The other zones are areas formed by drawing lines across the body of the deer. The deer is exposed for firing over a distance of twenty-three meters (twenty-five yards) which it travels in four seconds. At each end of the course the deer passes behind a bullet proof screen where the markers examine and paste the bullets holes. It is then run out far enough so the competitor can see it and the hit is marked. The firing point is 100 meters (108 yards) from the center of the course.

When the target is ready the competitor takes his place at the firing point with the breech of his rifle open. He may take any position. The officer in charge gives the command "Ready" and signals the pit to start the target. At the command "Ready" the competitor closes the breech of the rifle, but is not permitted to place the butt to the shoulder until the target appears. When the target appears the competitor places the rifle to the shoulder and fires one shot during the time the target remains in view. The target is then marked and pasted and prepared for a run in the opposite direction. The first run (from left to right) and the second (from right to left) are for the two sighting shots allowed. The competitor remains at the firing point and continues to fire one shot at each run of the target until the twenty record shots have been fired. The target is marked and pasted after each shot. In case of misfire not due to the fault of the competitor the target will be run again in the same direction for another shot. Ricochets which hit the target will be counted as misses. In marking the target the 5, 4, 3, and 2 can be indicated in the usual manner with the regular short range marking discs. The one can be indicated by moving the black disk up and down over the point hit and the zero by holding the red flag stationary over the point hit. A shot that misses the target will be indicated by waving the red flag.

The running deer matches in the Olympic Games include both team and individual matches

and both single and double shots. It is necessary therefore that the competitors provide themselves with repeating, double barrel, or automatic rifles.

Only the single shot match will be fired in the preliminary try-outs.

The running deer target can usually be constructed from material at hand. If light railway track (sixty centimeters) is on hand it can be laid in a suitable location on the target range. The track should be from thirty to thirty-five yards in length so as to give sufficient space at the ends of the 25 yard run to enable the markers to paste and mark the target and reverse it for the next run. Both ends of the track should be elevated and the car should run freely so that a strong push at one end will send it across the open space and up the incline at the other end. If this method of operation does not prove satisfactory the car can be pulled by means of a rope and a windlass of the barrel type.

It is desirable to lay the track in a shallow trench for the purpose of protecting the car but this is not essential.

The paper silhouettes of the running deer will be furnished by the National Rifle Association. The targets should be pasted to a backing of beaver board or similar material.

Several methods may be used for reversing the target. A four by four piece may be placed in a horizontal position on the car parallel to the axis of the track and hinged on one corner, light vertical uprights nailed to the four by four piece, support the two targets facing in opposite direction and so arranged that when one is in the vertical position the other is horizontal. A single target may be used and arranged to reverse on a vertical axis thus using both sides.

* A simple form of construction consists in setting up two strong posts six or seven feet high and from thirty to thirty-five yards apart and stretching a strong wire between them. A light rectangular frame of lath is hung to the wire by screw eyes or strong wire hooks and the deer target hung to the same frame by means of hooks so that it can easily be taken off and reversed. The frame with the target is pulled across the range by means of a strong cord wound on a windlass of the barrel type.

A still simpler method of operating the target may be used when there is a continuous target pit twenty-five yards or more in length. The silhouette of the deer may be tacked to a light pole similar to the marking staff and long enough so the deer will appear above the parapet when the pole is carried by a man who runs along the pit from one end of the course to the other. Several relays of runners will be required for this method of operation.

* * *

While at several of the larger sporting clubs of the country running deer and rising bear matches are frequently staged, this field of international competition has been largely left to European contestants. It is usually impracticable to send a separate team for this event and the few American entries which have been recorded in the past few years have been by men who simply tried out the game for the sport of it. It is hoped that this year some among the team squad sent to Europe will be able creditably to represent the United States in the Running Deer Matches.

Flip

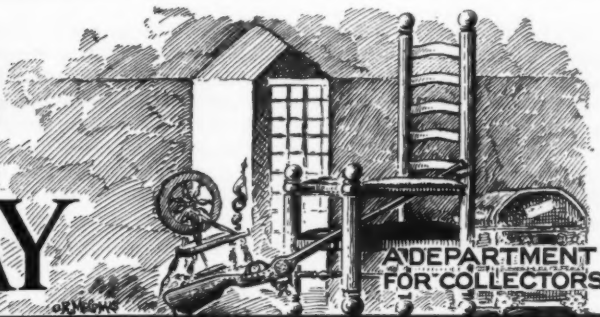
By Henry Walter Fry

I RECENTLY had an opportunity of seeing the effects of what is known as "flip" on the barrel of a ten inch pistol. For the benefit of those who are not acquainted with the term I may explain that "flip" is the sudden bending downwards of a barrel under the stress of a more or less heavy charge, reacting from the recoil in much the same way as the tip of a fishing rod bends downwards when the butt is jerked suddenly up. The longer and thinner the barrel and the heavier the charge the greater the flip.

I believe that it was first discovered by the late W. E. Metford, the well known English rifle expert. He relates that trying a rifle at twenty-five yards with the sights set exactly parallel with the bore he was surprised to find the shots striking farther below the point of aim than could be accounted for by the drop of the bullet. An examination of the sights showed them to be in correct alignment with the bore, so he concluded that there must be a downward bending of the barrel from its farthest point of support. He then goes on to say that flip is "a very convenient caper" of the barrel, as it enables a lower front sight to be used than would be needed were it absent from it, and points out that a revolver firing a heavy charge has to have a very high front sight to counteract the effect of recoil, the short, stiff barrel having no flip at all.

Now for my own experience. While a guest of the Springfield Revolver Club on Labor Day I was doing some shooting with my ten inch Stevens Diamond Model pistol, using it as a pocket rifle with elbow rest with rear peep sight and shoulder stock at a distance of fifty yards. Having made some fairly good groups in the center of the eight inch bull of the Standard American Target with .22 long-rifle N. R. A. U. S. ammunition, my friend Colonel Jones suggested that I try a box of .22 Long of the same make, with the same sights and the same aim as I had done with the .22 long-rifle. Now as the muzzle velocity of the ordinary .22 Long is a good deal less than that of the special .22 long-rifle which I had been using, it was only natural to suppose that it would group its shots lower down on the target. To our surprise however the group from the .22 Long was at least six inches higher up on the target than that shot by the .22 long-rifle. The only conclusion we could come to was that the flip given to the long slender barrel of the ten inch Diamond pistol by the heavier charge of the special long-rifle ammunition had caused the shots to strike lower down than those from the lighter charge of the .22 Long, with which there was little or no flip at all. This belief is confirmed by the difference in the sights of the two Diamond Model pistols which I use for off-hand shooting. Each is fitted with a 1-8 inch bead front and a square notch rear sight, but while the rear sights of both pistols are the same height above the barrel the front sight of the six inch pistol is at least 1-16 inch higher than that of the ten inch one. In the long barrel the flip makes the use of a high front sight unnecessary, but in the short barrel which has no flip a high sight has to be used to counteract the effect of the recoil.

FIRE ARMS & YESTERDAY



Conducted by Capt. Jerome Clark

Rifle Genealogy

By Roy C. McHenry

IF YOU have the patience to dig through the Chaucerized English of the chroniclers of the early part of the fourteenth century, you will come upon references to "crash gones" and "engines which cast little balls to frighten the horses." A little later "culverines a main" and "hand gones," which mean the same thing, begin to be mentioned.

As lethal weapons, these first portable firearms were jokes and were duly appreciated as such by the archers and cross-bowmen who played along the side lines at the fight fests, when they occurred in open country. Considering that the archers' practice range with their long bows was two hundred and twenty yards; that their arrows would go through a one inch plank at that distance and that the cross-bowmen could shoot through plate armor at a hundred yards, those boys had a right to laugh at fellows whose chief business in war was scaring horses.

The *hand gones* were simply child's size cannon, with the bulky proportions unchanged, lashed to pieces of wood which projected behind them a suitable distance so that the shooter's face would not be permanently disfigured by the spitting of the priming. It took two men to operate one of them, or to carry it around, as it often weighed as much as fifty or sixty pounds. The *culveriner* was the boss of the proceedings. The first step for him was to load as heavy as he dared with the fine, ungranulated powder which was all they had in those days. Then he'd crowd in a miscellaneous assortment of scrap metal and a few pebbles, after which he and his assistant would hoist it up so that the butt rested on the former's shoulder and the muzzle in the cleft of a forked stake, driven into the ground. Then the culveriner would move around his end of the gun until it pointed in the general direction of the fray without disturbing the forked rest. While he was so engaged, his understudy who was called a *gougat*, lit a splinter of wood from a little fire he had built when they arrived on the scene and stood ready with it burning in his hand. If the culveriner was satisfied with the pointing of his piece he would quote "Ho! Give fire, varlet!" or other words to that effect and the

gougat would touch 'er off. Thereupon the landscape would be deluged with the mineral and metallic components of the charge and nine chances out of ten, the culveriner would be knocked flat by the recoil, but if he saw a knight's or a baron's horse begin to pitch and sunfish out in center field and maybe buck his boilerplated rider out of the saddle, he felt well compensated for his trouble and annoyance, even if the knight or baron happened to belong to the same team he was playing with.

As time went on, the *hand gonne* altered its contour. Somebody found out that it wasn't necessary for the barrel to be three inches or more thick and by the middle of the fifteenth century the weight had been so far reduced that one man could pack the piece around alone. The vent had also been moved from the top of the barrel to the right side and then some one with a real good head on him perfected a simple lock which held a slow match and lowered the lighted end into the flashpan containing the priming. That did away with the services of the *gougat*. Probably the inventor got the idea of the lock from the crossbow and perhaps the same man adapted the crossbow sights to the barrel.

The ammunition was also improved. The ordnance experts fussed around and finally doped out that the powder behaved much better if it was granulated and that a fairly close fitting lead ball would sometimes hit the target even at a distance of fifty or seventy-five yards. Of course this was still way behind the long bow but was crowding the crossbow pretty hard. Every once in a while, after a battle, a knight would be picked up out of the debris with a hole neatly drilled through his basinet or his breastplate, and the king would have to constitute and create a new K. B. C. or B. V. D. to fill the vacancy caused by his demise.

The Britishers didn't take kindly to the matchlock at first. They much preferred their yew bows and clothyard staves, for, as they truthfully pointed out, a man could shoot ten arrows in the time it took to load and fire one bullet. They also claimed, although I never believed it, that an archer could hit a peeled willow switch "of the thickness of a man's

thumb" at their favorite range of two hundred and twenty yards. Consequently the gunmakers' trade didn't prosper in England for a good many years and even in the time of the Armada, the principal small arms on board the British ships were bows.

Over on the continent, however, the matchlock gained ground steadily. Lots of the armorers in Spain and France gave up their general practice and started in to specialize in arquebusses, and Nuremburg in Germany, and Vienna in Austria, were great centers for the gunmaking industry.

The Germans, who were just as patient and thorough in their researches as they are now, experimented and found out that the tighter the fit of the ball in the gun barrel, the straighter would be its course after it left it. This worked all right in theory, but when it came to application, it was found that the guns had to be cleaned after every shot or the bullet could not be rammed down. They tried breech loading, but as they couldn't make the breeches gas tight with a loose powder load, it wasn't a success. Then a gunmaker, some say he was Gaspar Kollmar, of Vienna, hit upon the idea of reducing the friction on the ball while loading, by grooving the barrel parallel to the bore. This was about 1498, and tradition states that in that year Kollmar equipped several marksmen with grooved barrel guns and that they took part in the annual match at Leipzig. The aforesaid marksmen proceeded to clean up the rest of the competitors and had to hire carts to bring their prizes home.

How the first spiral grooved barrels came into existence is a mystery. Perhaps a *dummkopf* apprentice accidentally twisted the lead (pronounced *lead*) rod by which the groove cutter was drawn through the bore and was soundly beaten for his carelessness, but at any rate, somebody tried such a barrel out and discovered that it gave a spin to the ball that materially increased its accuracy. Some accounts ascribe the invention to this same Gaspar Kollmar, and others to August Kotter, of Nuremburg, a famous gunsmith who flourished from 1500 to about 1520.

The pitch in the grooving was sharper then than it became afterwards, in the round ball period, running from 25 inches to 45 inches to a turn of the barrel, and the caliber was usually large, from .60 to .75.

Within the next few years another invention came out, the wheel-lock, which was one of the biggest strides that had been made in the development of hand firearms. They didn't have patent offices in those days, so I can't say who thought it out at first, although it is pretty certain that wheel-locks were first put out in Nuremburg. They made a great many clocks there at that time, and I have always had a hunch that the wheel-lock's ancestry was one of those bar sinister affairs and that a clock figured in it, somewhere. But you can judge for yourselves.

The new type of lock was quite an elaborate affair. A steel wheel, a couple of inches or so in diameter, was fastened to a pivot so that its edge projected at the outside of the flash pan. The periphery of the wheel was cut into the sawteeth and it was connected with a strong spring by a chain and when wound up with a T-shaped key or spanner, it was held in place by a ratchet released by the trigger. A hinged hammer let down from the front of the lock and in its jaws was held a piece of iron pyrites which rested against the saw teeth of the wheel under pressure from another spring. When the weapon was primed, the wheel spring wound and the hammer in place, all you had to do was to pull the trigger, the wheel would give a zip-snarl as it ripped against the pyrites, and in a second or so there would be a shower of sparks in the pan, followed by a powder flash and an explosion (if you were lucky) of the charge.

It takes quite a while to describe all this, but it didn't take nearly so long to fire a wheel-lock.

With a rifled barrel and wheel-lock ignition, a gun, even without the carving and engraving that the German gunsmiths loved to put on, set its purchaser back the price of a Ford car, so very few, except members of the nobility in good standing could afford one. It was simply out of the question to outfit the soldiers with such an expensive arm and they continued to fight with matchlock smoothbores for almost a hundred years longer, and the wheel-lock rifle was only used as a sporting and target arm until the early part of the seventeenth century. Quite a number of improvements were made in it. George Kuhfuss and Kaspar Rechtmagel, a celebrated firm of Nuremburg gunsmiths, are credited with putting out a pancover which slid back when the trigger was pulled, and so kept the priming dry.

The Venitians took up rifle making not long after the Germans, and some of the most beautiful old arms in existence were made by them. Rifling was still in an early experimental stage, however, and some of the grooving was exceedingly ill adapted to spinning a bullet. One of the favorite forms was *en étoile* (star shaped) and the barrels so rifled fouled so badly after one discharge that they had to be cleaned before they could be loaded again. Another form of rifling left the lands convex, which of course caused a big leakage of gas and consequently a lowered velocity to the bullet, but as nobody knew much of anything about ballistics then, it made no great difference. If a noble missed one shot at a

noble stag, he would ejaculate "Donnerwetter" or "Hell-un-Blazes" and reach back for another rifle, which his gun bearer had handy for just such emergencies. The scheutzenfest experts didn't mind cleaning between shots, for that was the regular procedure with them and they didn't care how long the matches strung out.

Over in the British Isles, the rifle didn't take much better than the match-lock had, although up in Scotland they revived the ancient sport of shooting at the popinjay, a very gayly decorated artificial bird, which had been an archery target. If you read Sir Walter Scott's "Old Mortality," you'll learn all about this interesting variation of match shooting and how the winner of the match and all the other participants used to go and get as 'fu' as Harry Lauder's Jock McGraw, when the match was ended.

During the Thirty Years War, Christian IV, of Denmark, at considerable expense, equipped a corps of his soldiers with wheel-lock rifles, which are the first regulation military ones on record. In spite of his up-to-date arms, the Danish king received a terrible beating at the hands of Wallenstein, who commanded the Austrian army, and had to give up a lot of territory in reparation.

A little later on, the Swedes and the French followed King Christian's example and created rifle corps in their armies. These organizations were pretty classy outfits and a man had to send in his family tree when he applied for enlistment. If it didn't come up to specifications he was blackballed and he had to fight with the common herd, with a smoothbore match-lock.

About the time that Christian IV was receiving the trimming from Wallenstein, the wheel-lock industry got a severe jolt. Some rank outsider from Holland, I believe, brought out a new kind of lock which didn't have to be wound up. It must have made the old line gunsmiths pretty sick to see what trouble they'd been to for all the years back, making wheel-locks, when a neat combination of a few springs, a hammer and a flint-and-steel could be made to do the work just as well. The worst of it was that it could be made profitable at about a tenth the cost of their complicated appliance. Something had to be done quickly or their big profits would be cut down.

Most of you who smoke Camel cigarettes remember the ridiculous damn lies that were circulated about your favorite brand. I won't say who started them, but I have a mighty strong suspicion. Some man, one of your personal friends, maybe, would call you aside and tell you that he'd *heard* that the manufacturers of Camels belonged to this or that religious sect and that they had given all the members of some other religious sect who worked for them the grand bounce. Some other time, some other man would come to you and say that he'd *heard* that certain employees at the Camel factory had developed cases of acute enteric encarditis, that it was highly contagious and that you'd better pitch that pack of smokes away and buy another

variety. That is propaganda, and that is what the wheel-lock manufacturers used against the flint-lock. Even now you can read in the arms books that the first flint-locks were called snaphaunces, from a supposed Dutch word meaning chicken thief, it being the assumption that the chicken thieves were too poor to afford wheel-locks and therefore invented flint-locks to carry with them on their marauding expeditions, presumably to shoot chickens off the roost. Even the nobility knew that the only appliances required for such a nefarious enterprise were a pair of stealthy feet, the same number of skilled hands and a sack, so the yarn was received as a joke and wasn't a bad advertisement for the flint-locks, either.

The next step was to try to keep flint-locks out of the armies. Some agent of the wheel-lock maker's guild got to one of the French generals and he came out with a book stating that flint-locks were uncertain in operation because most of the sparks spilled over the edge of the pan, which was undoubtedly true, but it was just as true of the wheel-locks. Finally some one who had a big pull got the ear of King Louis XIV and the latter promulgated an edict, forbidding the soldiers, who in those days usually selected their own arms, to possess flint-locks, and later, when he found he had made a law without any teeth to it, he made another prescribing the death penalty to any soldier owning a flint-lock.

That last was a pretty severe wallop but the new type of lock survived it and in less than ten years afterward the French king had to eat crow and repeal the anti-flintlock law and the big French royal armories began quantity production of snaphaunces.

When the large gunsmithing concerns at Nuremburg and other places saw the handwriting on the wall, they too began to fit their arms with flintlocks, but in the meantime, lots of little shops had sprung up in the Palatine states and in Switzerland and as everything was made by hand, in the largest as well as the smallest establishments, were able to keep on and earn their living.

In the British colonies, in America, the conditions were radically different from those in Europe. Except down in Virginia, where everybody claimed to be of high birth and lineage, nobody had much money, but practically everybody needed a gun. It wasn't a sporting arm, to be taken down and used on a holiday, if you felt like it, as it was across the water, but a tool you depended on for your three squares per, and if you lived away from the seacoast settlements, for your life insurance. Wheel-locks were out of reach on account of their price, unless a fellow happened to capture one in one of the wars that were put on with the French, at intervals, and very few people knew that there was such a thing as a rifle. The main standby, whether it was deer, turkey or Injuns you were out after, was a plain smoothbore match-lock, or later on a flint-lock fowling piece or musket. The New Englanders didn't take up the rifle until after the Revolution, although the rifle emigrated to Pennsylvania about 1684, which I mean to tell about some other time.

The Model 1840

By L. D. SATERLEE

I WAS very much interested in Mr. Breuil's article in THE AMERICAN RIFLEMAN of March 1st, and would say that he is correct in that there is such a model as the Model 1840 flintlock. This model is described in the 1841 Ordnance Manual, which edition is much scarcer than the 1850 edition. The following table, taken from Ordnance Reports, will give an idea of the number made at the Springfield Armory.

Sep. 30, 1839-Sep. 30, 1840	5,267 flint. Mod. 1822
Sep. 30, 1839-Sep. 30, 1840	700 flint. Mod. 1840
Oct. 1, 1840-Mar. 31, 1841	4,500 flint. Mod. 1840
Apr. 1, 1841-Sep. 30, 1841	6,200 flint. Mod. 1840
Sep. 30, 1841-Sep. 30, 1842	9,720 flint. Mod. 1840
Sep. 30, 1842-Sep. 30, 1843	4,600 flint. Mod. 1840
Sep. 30, 1843-Sep. 30, 1844	4,701 flint. Mod. 1840
Sep. 30, 1843-Sep. 30, 1844	3,200 perc. Mod. 1842

Or a total of 30,421 flintlocks Model 1840 made at Springfield Armory. No Model 1840 flintlocks were ever made at Harpers Ferry. Arms made at Harpers Ferry are as follows:

Apr. 1, 1841-Sep. 30, 1841	4,850 flint. Mod. 1822
Oct. 1, 1841-Sep. 30, 1842	6,576 flint. Mod. 1822
Oct. 1, 1843-Sep. 30, 1843	3,105 flint. Mod. 1822
Oct. 1, 1843-Sep. 30, 1844	608 flint. Mod. 1822
Oct. 1, 1844-June 30, 1845	2,225 perc. Mod. 1842

Thus it was not until the latter part of 1844 that percussion muskets were made at the armories. At Springfield Armory for the year ended June 30, 1851, 26,841 muskets Model 1840 were altered to percussion, and this accounts for most of the 30,321 Model 1840 muskets.

Mr. Breuil's reference to locks stamped USM 1835 is interesting, but the date is puzzling. This may refer to the twenty-four models made at Harpers Ferry in 1838, full particulars of which are to be found in an article in the June 1884 number of the *Magazine of American History*, pp. 521-523, entitled "The Rise of a Mechanical Ideal," by Chas. H. Fitch.

The percussion rifle caliber .54 is correctly known as Model 1841, the percussion musket should be Model 1842, although it was not produced in quantities till 1844.

* * *

Another View on the "Long Rifle"

By F. THEODORE DEXTER

WHEN the first article concerning "long guns" appeared, I made up my mind to remain perfectly quiet until all the boys got through telling about these pieces. In the February 1st issue of THE AMERICAN RIFLEMAN, we find the pictures of two long flintlocks, found by Joe Kindig, Jr., in an old farmhouse. These two long flintlocks are the greatest monument to the American shrewdness, which really built America into what it is, and I wouldn't be without a specimen "long gun," if I had to pay one hundred dollars for it. Here's the reason:

Back in Cumberland, R. I., where I was born, we had an attic over the woodshed which was called Captain Barrows' room, on account of the fact that Captain Barrows, my grandmother's brother, had left his personal belongings there when he left for the Civil War to be killed at Gettysburg. In this room were the rifles and other arms formerly owned by Sergeant Essex Dexter, who was somewhat of a "gun-man" before, during, and after the Revolutionary War.

One day, after I had become old enough to be inquisitive about arms, I grabbed onto one of these abnormally long flintlock rifles, and dragged it down to where grandmother was sitting on the front porch. I asked her if this was the rifle Essex Dexter had used in the Revolutionary War. Here is her reply:

"That rifle? If Essex Dexter only had that rifle and a good club, he would use the club first. That rifle was one of Essex's Indian Trading Rifles, that he used to buy furs with. The two left are two he had bought for trading just before he died."

"Then she told me the whole story—how traders were wont to ask the Indians for a pile of furs as tall as the rifle traded for, and how, with Yankee shrewdness, these traders had an extra foot or so put on the rifle so as to get more furs.

Most of these rifles we find perfectly plain. This was for two reasons. First, because the Indians liked to do their own decorating; and second, because highly decorated rifles cost more money, and these fur traders didn't care to give an Indian one penny more than necessary. Notice that most of these abnormally long rifles are without rifling, and they were mostly run into the fowling piece type, for the Indians had no great choice.

Those that we now find, as Joe Kindig found these two, are in pretty good shape, for they are "left over" trading stock, that was never traded. I recently located one that was a little overdone, for it was six foot nine and one-half inches long, and the barrel was about as thin as paper. Frank Pinkerton, of Marshalltown, Ia., has one longer than six foot six inches, and it is percussion—perfectly plain. This he got from the Tama Indians, who said that it was too long to shoot, but that their ancestors had traded good furs and ponies for it.

We find very few of these rifles, that come from the Indians, for just what the trader figured would happen, generally did, and if the poor Red Man did not wind it around a tree, after trying to shoot it, the increasing load finally brought results, and the rifle was discarded.

These old "long guns," excepting the match rifles (you can tell them by the heavy barrel and good work), are simply monuments to Yankee shrewdness, and when we discard them, as of little value, we are repudiating the very Spirit of America.

Darn it! we have thrown away as worthless, too much already, and it is with great regret that I note that these old "long guns" are considered of little value. Try to buy mine, and see how I value it. I won't take \$500.00 for it, for the spirit that has sent the eldest son of every Dexter family since 1690, to the Colors, is the same spirit that caused Essex Dexter to have these long rifles made, so as to get more furs from the Indians. We often find them in bunches, for those we find are those that were stored for future trade, and they are generally almost unused. The trader generally fired them a few times, so as to be able to give a decent demonstration when he had an Indian audience. My grandmother says that Essex Dexter used to carry his own rifle strapped over his back, and would carry one of these long guns along. If he killed game where Indians were about, he

would let on as though it was the old "long gun" that did the work. By Golly, they were not so dumb, and I am certainly glad, for the sake of their souls, that Teapot Dome was yet unleaseable.

Between you and I, half the smooth-bore Kentucky rifles were made for this very purpose—the traders had no idea of putting effective weapons in the hands of the Indians.

* * *

Looking Ahead

PROSPECTS for a continuation of the big caliber stories on "Firearms of Yesterday" which have marked this department since its inception were never brighter and the Editors are gratified to announce that exceptionally interesting discussions will appear in early numbers.

What lover of firearms whether he be the practical shot or the collector is unacquainted with the name and writings of Horace Kephart? Very few aside from the newcomers in the game. "Smoothbore's" inquiry in the March 15 number has brought from Mr. Kephart a most entertaining and informative account of the Hawken rifles. This will appear in the April 15 number. It will be followed by other articles of similar high standard.

The series on "American Military Pistols" which began in the March 15 number, will be resumed at an early date and will continue to appear from time to time until all models of these weapons have been discussed. Every effort is being made to make this series adequately cover the subject.

In passing, it may be mentioned that the Editors have been pleasantly surprised at the cordial welcome which regular old subscribers have given "Firearms of Yesterday." So well has the department been received that from time to time discussions which may appear to be elementary to the seasoned collector but which are of interest to our readers generally, will be published. Mr. McHenry's story on early shoulder arms in the current number is an instance in point.

* * *

Further Data on the Hines Sale

IT HAS been definitely decided to hold the sale of the Hines collection on the eleventh of April. This will be the first sale, and it is not known yet when the second one will take place. The catalogues should be out by the time you read this or by April first. Those who are not on the mailing list of the Walpole Galleries can obtain one by applying to them at 12 West 48th Street, New York City.

Among the outstanding items for the May 11 sale are: Walker Colt, Paterson-Colt, U. S. Martial pistols, ten genuine snaphauncs with sliding pan covers, the rarest multi-barrels, American, English and European—North Berlin, Henry, Lindsay, Mustapha Bey's Miquelet Rifle; Double-barrel Shotgun of Napoleon III, gold mounted Nock illustrated by Sawyer; inlaid Wheelock Rifle, 1550; Presentation gold mounted French flintlock pistol; English revolving 7-bbl. flintlock pistol; all metal 4-bbl. Irish pistol; English Tiger Pistol with Dagger; etc.

THE NRA NEWS



Conducted by ————— C.B. Lister

SAN DIEGO BANK OFFICIAL TO MAKE CITY ROUGH SPOT FOR BANDITS

The above heading appeared in the San Diego, California, *Union* of February 21. The clipping goes on to say—

"Determined to make San Diego the roughest spot on earth for bank bandits, should they ever attempt to operate here, J. W. Sefton, Jr., president of the San Diego Savings Bank, is organizing the fifty employees of that bank into a rifle and revolver club.

Mr. Sefton considers that the attaches of a banking institution should know how to shoot—and shoot straight. He hopes soon to perfect the marksmanship of every man and woman in his employ.

"Chief of Police Patrick has taken a lively interest in the proposed Bankers' Rifle and Revolver Club, and will assist in teaching them how to shoot. Sheriff Byers also has consented to help in this work. A shooting range is to be established in Collier park, on Point Loma, for the use of the bank employees, police and others.

"Mr. Sefton said yesterday that he believes the other banks should organize similar clubs, thus familiarizing all bank employees of the city with the use of weapons. If this is done, numerous shooting matches between the banks could be held and a trophy awarded the winner. In addition to being a precautionary measure against bandits, Sefton asserts that learning to shoot a revolver or rifle, or both, is good Americanism and something that every citizen should know. Twelve women and thirty-six men in the San Diego Savings Bank will line up for practice as soon as arrangements have been completed.

"Bank bandits, please note!"

Mr. Sefton certainly deserves the hearty support of every member of the National Rifle Association in San Diego. Get in touch with him, also with Chief of Police Patrick and offer your services as instructor. It is probable that there will be a number of howls from the class of citizens and officers who do not believe in preparedness, so it will be up to you to let Mr. Sefton and Chief Patrick know that there are a lot of good American citizens in California, who believe in the ethics of this method of making America a safe place for Americans.

THE DOINGS OF THE ROOSEVELT RIFLE CLUB

The following bulletin from the newly-organized Roosevelt Rifle Club, in New York City, is quoted verbatim, not only because of the fact that it contains an idea in the suggestion of a tackhole competition and improvement matches, but because it indicates the kind of breezy, newsy bulletins that the more successful clubs are finding it expedient to mail to their members weekly.

The Doings of the Roosevelt Rifle Club
February 19, 1924

Acting upon the suspicion that it is well to let all hands know what is going on, the Executive

Officers take the opportunity to advise the gang about certain various matters. Incidentally Mr. T. R. Baxter is an Executive Officer, duly and unofficially elected by the other two by his valiant service in the interest of the club.

We have eleven new members, by name as follows: McMurdo Silver, Dr. Fred. Wise, Dr. Edward H. Proudman, W. T. Malone, C. W. Tilley, Marshall Murray, D. J. Murphy, W. H. Proudman, Al Davis, Herbert Jay Davis, and Carl A. Heins. We now have 50 members, and are growing daily.

The range is open, and while we have not got the parlor in shape for tea, the shooting is good and a gun will point as straight now as any other time. So come and use it. New mats have been ordered and will be ready for use in about ten days. The pit boy speaks English. We will be in fine shape in about a week or so. One of our Executive Officers is working out the matter of outdoor range, and will have something cute to report very shortly. It is being discovered that the Roosevelt Club is the aces and all members are of the holiest, and can have anything they want.

NOTE: Starting on March 15th, we will have open house on all range nights, meaning every Thursday night and Saturday afternoon, for the welcome of all shooters, of any club, or no club. All are welcome. This will be in the form of a Tackhole Competition, running through March, where we use the 25-yard target at 50 yards, ten shot strings. Entry fee, nothing, targets cost ten cents each, and shoot as many as you want. To the winner a very fine gold medal, to second an equally fine silver medal, and to third position a bronze medal. If the entries warrant there will be a distribution of cash over and above the medals, as the club does not propose to make a plugged nickle on the match.

Starting right away, we also have the Improvement matches. Each man shoots a card, in all four positions, and his total is taken as his par. The next month he does likewise, and the increase in score is noted. The man who increases his score the most wins the bacon, in the form of three medals as per usual with this club, to the first three men. All are requested to come and win the medal. It, the medal, is sick of lying on the shelf of a dealer, and hopes it can repose upon the warm and manly breast of a shooter. So hop to it, gentlemen, the medal is lonesome.

Do not stay away because you have not got a gun. Come anyway. You will get a better gun to shoot with if you bring none as some of the boys are heeled with the best. You'll have a rifle shoved at you the minute your nose passes the door. The club is getting all information regarding guns, for those who need them, and will have a list of new and second guns ready at all times. A good second-hand gun is better than a poor new one, if it has not been abused.

Signed,

Jerome M. Hilborn,
T. R. Baxter,
John Wallace Gillies.

Note especially the Tackhole Competition listed herein, and open to all shooters, whether club or otherwise. The Roosevelt Club shoots at the 104th Field Artillery, 68th Street & Broadway, Thursday nights and Saturday afternoons.

TRY THIS ON YOUR CITY OFFICIALS

Piqua, Ohio, has been favorably mentioned in these columns before. They are working a stunt out there now, however, which makes them due for further comment. In connection with the series of return matches being fired by the Piqua Club with clubs in nearby communities, they are staging a series of matches between the town or city and county officials wherever they happen to be visiting. The Piqua City Fathers' Team consists of the Chief of Police, a Judge, a Mayor, a County Commissioner, and Chief of the Fire Department. It is a safe bet that whenever any anti-firearms legislation is mentioned in the vicinity of Piqua, it will be carefully and intelligently considered by these officials before they back it up.

How about a challenge in your club from the Chief of Police to the Judge of the City Court, the Chief of the Fire Department, the Mayor or the City Council? Sound like a wild flight of the imagination? It may be so, but Piqua has accomplished it.

* * *

NEW YORK REACTS TO THE SULLIVAN LAW

The following dispatch from the New York *Sun and Globe* of February 20th is of interest to every shooter in the United States and particularly to those in the Empire State. Every member of the National Rifle Association should make it his business to let Mr. Esmond know that his broadminded and sound attitude is appreciated and has the backing of loyal Americans. If you do not let him know how you feel about it, you may rest assured that the people who are for more unenforceable laws will let him have their viewpoint.

ASSEMBLYMAN FOR ARMING CITIZENS

Esmond Calls for Repeal of the Sullivan Law

Special Dispatch to THE SUN

The Sun Bureau.
Albany, Feb. 20.

Instead of making it more difficult for citizens to arm themselves against banditry, Assemblyman Burton G. Esmond, of Saratoga, Chairman of the Assembly Codes Committee, favors repeal of the Sullivan anti-weapon law. Mr. Esmond has advanced the argument that law abiding persons now find it so difficult to get pistol permits that they do without them, while criminals, unabashed by statutes, have no trouble in providing themselves with revolvers for which no license fee is ever paid.

Mr. Esmond's views came to light at a hearing on measures designed to strengthen the Sullivan law by requiring all pistol permits to be made out in triplicate, one to be kept by the issuing authority, one to be sent to the State police and the other to be retained by the holder of the permit. The bill also provides that a photograph of the licensee must be affixed to the permit.

Coming from a section of the State through which rum running highways pass, Assemblyman Esmond is not only against the bill, but he feels that citizens should be permitted to carry defensive weapons without going through so much red tape as now exists. The legislator pointed out that repeal of the Sullivan law would in his opinion, do much to put an end to the crime wave.

THE REAL CLUB IDEA

The following paragraph from a letter written by Mr. W. F. Armitage, secretary of the Auburn, N. Y., Rifle Club, indicates that Auburn has a live rifle club, the officers and members of which are building it up along the lines of a real meeting place for the sportsmen of their locality:

"Note: The writer got a letter from Mr. H. G. Meacham, (Works Engineer), Goulds Mfg. Co., Seneca Falls, N. Y., yesterday. We will certainly be glad to make him a member of our club. Have arranged with our executive officer for a sort of extra shoot night next Tuesday night. He will be invited to come over and bring two or three others who might be interested. We feel that with our cooperation, a club might be organized in Seneca Falls if he can get others interested."

Notice that a special feature shoot is to be staged for the benefit of the visitors. Certainly the club members will be unusually interested in the shoot because it is something special, and most assuredly the visitors will go away with a warm spot in their hearts for the club which has made an extra effort to entertain them. Too few rifle clubs adopt this attitude of sociability and cooperation.

* * *

MARYLAND STATE RIFLE ASSOCIATION PLANS ACTIVE YEAR

The Maryland State Rifle Association, which in recent years has centered most of its activities around Baltimore, plans this season to put that city on the shooting map. Arrangements have been made for a triangular shoulder-to-shoulder match between teams from the Baltimore Police Department, the Maryland State Police Department, and the Maryland State Rifle Association.

General Charles D. Gaither, Commissioner of the Baltimore Police, who is one of the directors for life of the National Rifle Association, is strongly behind the proposed pistol match shooting program and Colonel E. Austin Baughman, Commissioner of the State Police, is also behind the movement. Captain Howard A. Harker, who is well-known to the men who have attended Camp Perry in recent years is the newly elected President of the Maryland State Rifle Association, so it is to be expected that there will not only be some pistol matches, but some real pistol instruction before the season is ended.

The "Baltimore News" has promised a silver trophy cup to the winning team, and if the cup is as attractive as the trophy which was presented last year by the same newspaper on the occasion of the Third Corps Area Match, it will prove ample incentive to the guardians of the law in Maryland to keep up their pistol work for future annual competitions. It is to be hoped that this activity on the part of the Maryland State Association will prove the incentive for Baltimore to send a police team to the National Matches at Camp Perry. In addition to their police activities, the Marylanders expect to send a team to the Naval Academy on April 26th to participate in another triangular event between teams representing Maryland, the District of Columbia, and the Naval Academy over a modified national match course.

The match between the Third Corps Area medal winners and the Maryland State Association will also be held on the Camp Meade range as it was last year. The Gaither-Pair Match will

be fired, and the annual N. R. A. members match will be made a part of the season's program.

It is to be hoped that these activities largely centering around Baltimore, may prove an incentive to the rest of the State. There are many localities in Maryland with excellent natural range possibilities and hundreds of good riflemen needing only some stimulus and organization to make the State one of the most active in this country for the developing of riflemen.

IN MEMORIAM

IN the shooting world in which we knew him best, he was not what one would have called a star of the first magnitude. Not always did he play the stellar role at Sea Girt and Perry. But he was of the best of American manhood, a typical rifleman, hard-shooting, two-fisted, honest with all, respectful of womanhood, the friend of children, and the pal of men.

Young, enthusiastic about the game that men play with the rifled tube, he found an outlet for his energies on the ranges of the various organizations of which he was a member—the Brooklyn Rifle Club, the Manhattan Rifle and Revolver Club, the Yonkers Rifle Club, the 22d Engineers, the N. R. A. and the U. S. R. A.

We found him wherever shooting was in reach. Wherever the sport called for devotion or for voluntary sacrifice in time or money, there we found Emil Blecher, for whom the eternal marker pulled the final target on March 2.

The cause of rifle shooting loses much in the death of this man, who by deed and example made many converts to the cause to which he devoted his best thought and much unselfish effort.

Emil Blecher, who was thirty-two years old, was buried with military honors by his comrades of the 22d Regiment. He is survived by his widow and by both his parents. Peace to his ashes!

ERNEST COLER.

DOINGS AT MANHATTAN, KANSAS

The Manhattan Rifle and Revolver Club met February 1st and the following officers were elected for 1924:

President, A. A. Shiner; *Vice-President*, Frank Aiman; *Secretary*, Paul A. Shepherd; *Treasurer*, C. B. Knox; *Executive Officer*, W. R. Correll.

A new indoor range site was selected and voted to be put in shape. This is a basement one hundred feet long and will allow the use of any caliber of revolver or pistol as well as the .22 rifle.

The City Police Department has been taken into the Club and some good shots are being developed. The Club has several men who have had National Match experience, so good instruction is assured.

The Club desires some post matches, either handgun or rifle.

Write the secretary at Box 393 K. S. A. C., Manhattan, Kansas.

OKLAHOMA KEEN FOR SMALL-BORE GAME

Beginning April 1st and lasting for three weeks, an indoor telegraphic rifle match, representing the individual gallery championship of Oklahoma and sponsored by the "Oklahoma Sportsman," a publication with headquarters in Tulsa, will be staged. The list of prizes is very attractive, starting with a silver cup representative of the state championship, donated by the "Oklahoma Sportsman," and going down through a list which includes a Model 1912 Savage, a rifleman's shooting case, a hunting coat, a fishing tackle box, and some .22 caliber long rifle ammunition. The match will be fired under N. R. A. regulations, and calls for two sighters and ten shots for record in each of the four standard positions every week. According to the announcement of the match, the small bore game has become more popular all over Arizona this winter, and the "Oklahoma Sportsman" is taking this method of keeping the ball rolling, and hopes to make the match an annual affair. One of the healthiest signs for the rifle shooting game is the steadily increasing number of matches of this character sponsored by high-class publications and sportsmen's organizations.

Incidentally, Tulsa is building a new high school and municipal building, and the riflemen of the city have high hopes of seeing ranges installed in both the new buildings.

* * *

GALLERY QUALIFICATION COURSE PROVES ATTRACTIVE

So far this season forty-six gallery riflemen have succeeded in qualifying. Twenty-nine of them won their decorations at 50 feet, and seventeen obtained them at 75 feet. There seems to be a growing tendency for the newer clubs with 50 foot ranges to do more active shooting than the older organizations having the standard 75 foot range.

C. G. Harrel, University of Chicago rifleman, who has been the outstanding figure of the Gallery Matches, has the further distinction of having turned in the highest score over the qualification course so far this winter. Harrel's score of 743 was fourteen points above C. M. Kerns' of Juniata, Pa. Harrel shot a .22 Springfield with Peters Tackhole ammunition, while Kerns shot a Model 52 Winchester with Palma ammunition. At 50 feet the high score so far this year comes from M. W. Dinwiddie, of Washington, D. C. Dinwiddie shot a .22 Springfield with U. S. N. R. A. ammunition, and has a 735 to his credit. W. H. Burt, of Thermopolis, Wyoming, with a Model 1919 Savage and Peters Tackhole ammunition, has a 733, while James S. Wilson, of Iowa City, also shooting a Springfield and U. S. N. R. A. has 732. The following lists will be published from time to time as further qualifications are turned in.

Gallery Experts—75 Ft.

Place	Name	Address	Score
1.	C. G. Harrel, Chicago, Ill.		743
2.	C. M. Kerns, Juniata, Pa.		729
3.	H. C. Williams, Los Angeles, Cal.		727
4.	F. C. Payne, Los Angeles, Cal.		725
5.	S. C. Monahan, Chicago, Ill.		725

Sharpshooters—75 Ft.

Place	Name	Address	Score
1.	Alfred K. Friedrich, Ames, Ia.		723
2.	H. H. Jacobs, Dayton, Ohio.		719
3.	G. L. Cutting, Worcester, Mass.		712
4.	Leslie A. Moss, Los Angeles, Cal.		711

Marksmen—75 Ft.

Place	Name	Address	Score
1.	Dr. H. R. Brunton, Malden, Mass.		695
2.	W. D. Smith, Jr., Tarrant, Ala.		693
3.	S. R. Bonsey, Bangor, Maine.		691
4.	O. L. Garl, Birmingham, Ala.		688
5.	F. W. Parker, Jr., Chicago, Ill.		685
6.	E. C. Gustafson, Cleveland, Ohio.		680
7.	C. S. Bender, Lynn, Mass.		680
8.	C. C. Dyer, Washington, D. C.		678

Gallery Experts—50 Ft.

Place	Name	Address	Score
1.	M. W. Dinwiddle, Washington, D. C.		735
2.	W. H. Burt, Thermopolis, Wyo.		733
3.	James S. Wilson, Iowa City, Ia.		732
4.	Fred B. Pickett, Pasadena, Cal.		729
5.	R. G. Smith, Akron, Ohio.		728

Sharpshooters—50 Ft.

Place	Name	Address	Score
1.	Jack E. King, Pasadena, Cal.		722
2.	Floyd D. Gibson, Iowa City, Ia.		721
3.	Wm. A. Rorison, Jr., Madison, Wis.		720
4.	Ralph R. Haines, East Akron, Ohio.		720
5.	F. G. Dana, Indianapolis, Ind.		719
6.	Dr. M. E. McManes, Piqua, Ohio.		716
7.	Dr. R. B. Clugh, Akron, Ohio.		716
8.	L. H. Edwards, Akron, Ohio.		715
9.	Dr. E. B. Loofboro, Janesville, Wis.		712
10.	Dr. C. J. Moore, Bristol, Conn.		710
11.	Bruce Sidmore, Akron, Ohio.		706
12.	C. D. Wild, Janesville, Wis.		703
13.	L. D. Vaughn, Thermopolis, Wyo.		701

Marksmen—50 Ft.

Place	Name	Address	Score
1.	Dr. K. S. Hart, Lansing, Mich.		699
2.	Albert B. Plank, Pasadena, Cal.		697
3.	Dr. R. J. Hart, Janesville, Wis.		695
4.	D. G. Cackler, Akron, Ohio.		694
5.	H. S. Overacre, Passaic, N. J.		694
6.	R. L. Keith, Lansing, Mich.		692
7.	Paul Bauerle, Lansing, Mich.		689
8.	Chas. R. Burdette, Baltimore, Md.		688
9.	Dr. D. B. Wylie, Salinas, Cal.		686
10.	Curtiss F. Dowd, Pasadena, Cal.		685
11.	James M. Hoague, Janesville, Wis.		679

RECORD SCORE WINS METROPOLITAN CHAMPIONSHIP

The annual championship match of the Metropolitan Rifle League, held at the 47th Regiment Armory in Brooklyn, N. Y., March 8th, 1924, brought out, from clubs in New York and neighboring States, forty entries, which taxed the capacity of the twelve firing points available throughout the afternoon and evening. This match consists of fifty consecutive shots at 100 yards, prone, in strings of ten. The spotting of shots is required to be done from firing point.

In the early part of the match it looked good for 490 to take the match or one of the medal places, but before the end several better scores were produced. J. W. Gillies, of New York City, with two possibles in his string, made a record score for this match of 495 points out of a possible 500. W. J. Coons, of Arlington, N. J., was second with 492; and Paul Landrock, of Union Hill, N. J., with the same score, third.

Several ten-shot possibles were made during the match: Gillies (2), Everett (2), Coons, Landrock, Johnson, Manville, and Hession. Possibles at 100 yards are always stimulating.

The re-entry match on the five-ring target was in progress throughout the day's program, yielding, of course, to the preference which the cham-

pionship event had for the firing points. This re-entry consists of five shots at 100 yards on a bull's eye having five rings spaced four-tenths of an inch apart. In this event Paul Landrock, of Union Hill, N. J., took first place with a possible score of 25 points. Second place was won by C. H. Johnson, of Philadelphia, on a target of twenty-four points.

The handicap of the Metropolitan Rifle League was concluded on Saturday, March 1, 1924, after a run of seven consecutive weeks. This is essentially a match for possible targets, a hard grind of seventy-five scores this year to produce the best ten to count. The match was shot on the 100-yard range at the 47th Regiment Armory. Handicaps were computed on the basis of the ten best of first twenty targets fired by the competitor, by giving him points sufficient to bring such score to a total of 980. Then it was simply a question for him to make better targets than he had already fired. Handicap men climbed

into the medal positions this year, followed next in order by five men shooting from scratch.

The match was won by J. W. Gillies, of New York City, with a full score of 994 plus six points handicap. C. W. Tilley, of Arlington, N. J., was second, likewise with a full score of 978 plus 23. Third place went to J. E. Murray, of New York City on a score of 986 plus ten—996. High scratch place was won by Jos. Martin, of New York City, upon a score of 995 in which there were five possibles.

The Metropolitan Rifle League provided this winter its usual indoor match for the Springfield rifle with gallery loads. This match consisted of the best ten targets out of not more than fifty, to be shot at 100 yards prone with the Service rifle substantially as issued. P. H. Agramonte, of New York City, took first place and the gold medal with a score of 957 points. Second place went to H. A. Fischer, of New York City, and third place to Lieut. A. N. Siler, of Fort Wood.

RESULTS OF NEW YORK METROPOLITAN RIFLE LEAGUE CHAMPIONSHIP MATCH
(Indoors. Fifty Shots at One Hundred Yards, Prone)

[Shot at the Forty-Seventh Regiment Armory, Brooklyn, N. Y., March 8, 1924. Forty entries.]										Prizes
Name	Address	Club	Score							
1. J. W. Gillies, N. Y. C.		Roosevelt Rifle Club	98	100	100	99	98	495		5.00
2. W. J. Coons, Arlington, N. J.		Arlington R. Club	99	100	98	98	97	492		5.00
3. P. Landrock, Union Hill, N. J.		Manhattan R. Assn.	99	99	100	96	98	492		5.00
4. C. H. Johnson, Phila., Pa.		Frankford Ars'l R. Club	97	96	99	99	100	491		5.00
5. L. T. Everett, Mahwah, N. J.		Mahwah Rifle Club	98	96	100	100	97	491		5.00
6. J. M. Hilborn, N. Y. C.		Manhattan R. & R. Assn.	99	97	99	97	98	490		4.50
7. L. Manville, N. Y. C.		Manhattan R. & R. Assn.	100	98	99	96	97	490		4.50
8. L. J. Miller, Phila., Pa.		Brooklyn Rifle Club	97	96	97	99	99	488		4.00
9. C. S. Landis, Wilmington, Del.		Wilmington R. Club	96	98	99	99	96	488		4.00
10. P. F. Lahm, Br'k'n, N. Y.		Manhattan R. & R. A.	99	95	98	98	97	487		3.75
11. J. W. Hession, Dobbs Ferry, N. Y.		M'h't'n R. A.	96	95	100	97	99	487		3.50
12. A. Eisenhauer, Phila., Pa.		Frankford A's'n'l R. C.	97	95	98	99	97	486		3.50
13. J. Roujon, Arlington, N. J.		Arlington Rifle Club	99	98	95	96	98	486		3.50
14. C. St. John, Brooklyn, N. Y.		Brooklyn Rifle Club	97	97	98	98	95	485		3.50
15. L. Roujon, Arlington, N. J.		Arlington Rifle Club	98	95	95	98	99	485		3.50
16. Jose Froletz, Lima, Peru		Unattached	97	96	97	98	96	484		3.00
17. G. F. H. Konig, N. Y. C.		Brooklyn Rifle Club	95	98	99	96	95	483		3.00
18. W. Mook, Arlington, N. J.		Arlington Rifle Club	94	98	96	95	97	480		3.00
19. Jos. Martin, N. Y. C.		Manhattan R. & R. Assn.	97	94	96	98	95	480		3.00
20. M. Alferro, Lima, Peru		Unattached	94	97	92	98	98	479		3.00
21. J. E. Murray, Br'k'n, N. Y.		Manhattan R. & R. A.	91	98	96	95	98	478		2.50
22. P. H. Agramonte, N. Y. C.		Roosevelt Rifle Club	94	95	94	96	98	477		2.50
23. C. W. Tilley, Arlington, N. J.		Arlington Rifle Club	96	95	96	97	93	477		2.50
24. G. Demeter, N. Y. C.		Yonkers Rifle & Rev. Club	93	96	94	97	96	476		2.50
25. G. L. Schenck, Elizabeth, N. J.		Union Rifle Club	95	95	95	96	94	475		2.50
26. C. Held, Allentown, Pa.		Bear Rock Rifle Club						475		
27. W. Weiss, Germansville, Pa.		Bear Rock Rifle C.						475		
28. Mrs. J. M. Hilborn, N. Y. C.		Roosevelt Rifle Club						475		
29. G. Stittler, Germansville, Pa.		Bear Rock R. Club						474		
30. A. N. Siler, Ft. Wood, N. Y.		Brooklyn Rifle Club						474		
31. J. Terry, Williamsport, Pa.		Frankford Ars'l R. C.						474		
32. W. O. Webster, Wilmington, Del.		Wilmington R. Club						473		
33. M. Murray, N. Y. C.		Manhattan Rifle & Rev. Assn.						471		
34. T. R. Baxter, Plainfield, N. J.		Roosevelt Rifle Cl.						471		
35. W. B. Pope, Brooklyn Navy Yd., U. S. S. W. Va.								462		
36. R. A. Drever, Kearney, N. J.		Kearney H. S.						452		
37. E. F. Burkins, Wilmington, Del.		Wilmington R. C.						452		
38. E. Hamm, Germansville, Pa.		Bear Rock R. Club						437		
39. R. H. Greene, Arlington										
40. R. M. Betts, Frankford Arsenal										

RESULTS OF NEW YORK METROPOLITAN RIFLE LEAGUE HANDICAP MATCH
(Indoors, 100 Yards, Prone, 75 Targets of 10 Shots Each, Best 10 to Count.)

[Concluded after seven weeks, March 1, 1924, at Forty-Seventh Regiment Armory in Brooklyn.]										Prizes
Name	Club	Handicap	Best Scores	100	99	98	97	96		
1. J. W. Gillies, Roosevelt		6	1000 75	4	6					\$23.75
2. C. W. Tilley, Arlington		23	1000 42			3	2	5		Gold Medal
3. J. E. Murray, Manhattan		10	996 75	2	3	4	1			23.75
4. Jos. Martin, Manhattan		* 995	75	5	5					Silver Medal
5. Paul Landrock, Manhattan		* 993	74	3	7					20.00
6. Marshall Murray, Manhattan		* 992	67	2	8					Bronze Medal
7. A. N. Siler, Brooklyn		* 991	73	4	3	3				17.50
8. Leo Manville, Manhattan		* 990	75	1	8	1				15.00
9. P. F. Lahm, Manhattan		7	988 39		3	5	2			12.50
10. Chas. St. John, Brooklyn		2	987 47	1	3	6	2			11.00
11. G. F. H. Konig, Brooklyn		4	985 35		4	4	2			9.50
12. H. K. Mann, Ft. Slocum		* 985	27	1	3	6				7.50
13. T. B. Crawley, Marine Barracks		8	985 40		3	1	6			6.50
14. P. H. Agramonte, 7th Regiment		6	984 34		1	6	3			4.00
15. George Demeter, Yonkers		* 982	56		2	8				4.00
16. S. M. Milman, Brooklyn		* 982	28	1	2	5	2			4.00
17. R. H. Greene, Arlington		7	982 23			5	5			4.00
* Scratch										

[Four additional entries withdrew.]

T. K. LEE WINS PISTOL CHAMPIONSHIP

An old-timer came back in the pistol championship match, T. K. Lee, of Birmingham, Alabama, winning the match with the splendid score of 555. Lieut. S. R. Hinds, at Fort Snelling, who won the Individual Slow Fire and Individual Rapid Fire events, was runner-up in the championship with an aggregate score of 520, while T. J. Girkout, of Boston, who finished second in the slow fire and third in the rapid fire match, continued his consistent shooting by finishing third in the championship with a score of 519. Lee used a Colt Automatic in the rapid fire stages of the championship, and a Smith & Wesson perfected target pistol in the slow fire stages. He fired Peters' Tack Hole ammunition throughout. Hinds used a Smith & Wesson heavy frame revolver and U. S. N. R. A. ammunition, while Girkout used a Colt Automatic with U. S. N. R. A. ammunition.

RESULTS OF PISTOL MATCH NO. 3 CHAMPIONSHIP

T. K. Lee, Birmingham, Ala.	555
S. R. Hinds, Ft. Snelling, Minn.	530
Thomas J. Girkout, Boston, Mass.	519
Leslie A. Moss, Los Angeles, Cal.	518
A. E. Hart, Cleveland, Ohio	517
F. C. Payne, Los Angeles, Cal.	517
Ned E. Cutting, Los Angeles, Cal.	507
H. C. Williams, Los Angeles, Cal.	492
Roger M. Kelley, Pasadena, Cal.	483
A. E. Hertzler, Halstead, Kan.	480
Jim Barlow, Halstead, Kan.	466
Chas. R. Burdette, Baltimore, Md.	457
Harry Morrell, New Haven, Conn.	450
A. M. Reynolds, Schenectady, N. Y.	448
Dr. C. J. Moore, Bristol, Conn.	434
Harry E. Brill, Tulsa, Okla.	429
T. F. Meagher, Jr., Tulsa, Okla.	409
J. M. Sorensen, Perth Amboy, N. J.	401

Not Completed:

Col. C. E. Stodter, Washington, D. C.
Eric Johnson, Cleveland, Ohio

Not Reported:

Reid R. Morrison, Mooresville, N. Car.
I. G. McQueen, Moulton, Iowa
First Lt. George F. Grant, Salinas, Cal.

CENTRAL HIGH SCHOOL OF WASHINGTON WINS GIRLS' SCHOOL MATCH FROM SMALL FIELD

In the Girls' School Team Championship, a new event added to the program this year, the Central High School Girls' Team, of Washington, D. C., walked away to an easy victory with a team total of 2722 against 2581 for the Waterloo High School, of Waterloo, Iowa. Evanston Township finished third, well down with 1764. In fairness to the Evanston Township girls, it should be stated that they were automatically handicapped through use of the "as issued" short muskets and ammunition. Waterloo High School used Winchester Model 52's with Precision ammunition, while the Central High School Girls used Peterson-Ballard rifles.

LOS ANGELES RIFLE AND REVOLVER CLUB AND ENCINO COUNTRY CLUB ARE SEPARATE PROJECTS

A letter from the Executive Committee of the Los Angeles Rifle and Revolver Club reads in part:—

"The old organization known as the Los Angeles Rifle and Revolver Club passed out of existence shortly after the first of the year, only five members appearing at the annual meeting, one of whom was an officer; the club being without range, and having heavy financial responsibilities due to injury to a marker some years ago and a case still unsettled.

"Its remaining officers declared it disbanded and so notified the members, because of its financial responsibility, and the responsibility for Government arms and supplies.

"Old members of the old club, interested in seeing the old name kept going, organized the Los Angeles Rifle and Revolver Club a few weeks ago, affiliated with the National Rifle Association with a list of its officers and members, leased the Schuetzen Park range where the club held its first shoots in 1908, and is in the rifle game as a going concern."

There are some members of the Los Angeles Club who have joined the Encino Club, and it is under the supervision of these men that the Encino Range is being laid out.

In view of the fact that the Los Angeles club has acquired its old shooting plant at the Schuetzen Park range, there seems to be no reason to retract the statement made in the issue of March 1 to the effect that the Los Angeles Club was one of the best equipped in the country. It is to be expected that this old line outfit will be heard from to a considerable extent during the coming season.

IF IT HADN'T HAPPENED AT AN N. R. A. CLUB WE WOULDN'T BELIEVE IT

Winding up the account of the weekly shooting of the San Jose Rifle Club appearing in their local paper in the following story:

A REMARKABLE SHOT

Three weeks ago today at a regular shoot, while the shooters were having their "mulligan" at noon, close to the 600 yard range, a coyote was seen coming over the east hill back of the targets with something white held in its mouth. Bill Jones, whose rifle was at hand, threw a clip into his gun and from a prone position fired one shot, killing the coyote instantly; the shooters all went to examine the result and found that the bullet entered the left shoulder tearing through and ripping the entrail out on the ground. The white object in the coyote's mouth was a white muscovy drake, uninjured by the coyote but having his right leg amputated below the knee as clean as though done by a first class surgeon. Jones took the duck back to the point of firing, and taking a needle and white thread out of his trick bag, pulled the skin together over the bone and sewed it up. Bill took the drake home and after the leg healed up in a week, he made a wooden leg for it and today the drake is proudly stumping around and enjoying life as well as ever. If anybody has lost his property he can get the value of his drake, but our friend Bill is loth to part with his duck. The shot was made exactly 643 yards from firing point, and all of which proves that a man can be a good shot, a good doctor and a skillful artificial limb-maker besides being a great humanitarian.

Rumor has it that Kit Carson, Daniel Boone, Morgan et al have been tumbling restlessly in their graves as a result of Bill Jones' performance.

DELAWARE AND HUDSON POLICE GET INTO SHAPE FOR NATIONAL MATCHES

Five members of The Delaware and Hudson Police department on Thursday afternoon, February 28, met a similar team representing the 104th Field Artillery on their pistol range in Binghamton for a previously arranged match. When the smoke had cleared away, our officers had a score of 714 points as against 640 scored

by the militia men. Fully 500 spectators, it is estimated, witnessed the shoot, the scores of which follow:

POLICE

	10 shots at 15 yards	5 shots at 25 yards
Chief J. K. Jensen	100	46
Captain O. B. Abel	97	46
Captain J. R. Johler	97	43
Lieutenant James Fox	99	48
Patrolman M. Nelson	94	44
Totals	487	227

ARTILLERYMEN

	10 shots at 15 yards	5 shots at 25 yards
Brown	99	43
Allen	91	46
Janne	86	41
Sincock	90	39
Martin	84	21
Totals	450	190

RIVERSIDE, CALIFORNIA TO HAVE SPLENDID NEW RANGE

We are advised that the Riverside Rifle Club is building a new range, which, when completed, will be one of the best in the country affording facilities for firing at two hundred, three hundred, five hundred, six hundred and a thousand yards. This new layout will serve several clubs in addition to the Riverside outfit being the only shooting plant so completely equipped within a radius of one hundred miles. We are expecting a description of the range as well as some pictures just as soon as the work now being done is completed.

CALIFORNIA LOOKS OUT FOR THE BEGINNER

On March 16th, the California Rifle and Pistol Association staged their Beginners' Match for the trophy of the 462nd Company C. A. C., now Battery D, 250th Artillery Corps, California National Guard. Six teams and fourteen unattached individual competitors fired, making the total number of beginners in the competition an even half-hundred. The six men representing the University of California won the event with a team total of 1025 over a course calling for ten shots offhand at 200 yards, ten shots rapid fire at 200 and 300 yards, and ten shots slow fire at 500 yards.

On the same date, the long range match was fired, and was won by C. F. Williams, of the Olympic Club, with a total score of 170.

ANACONDA, MONTANA, BACK ON THE SHOOTING MAP

The old Anaconda Rifle Club which has been dormant for the past two years, has come back into the game under the leadership of Mr. Fred Fisher, President; Joe Long, Vice President; Byron H. Jennings, Secretary-Treasurer; and Jack Robinson, Publicity Officer. The new organization has taken over the assets of the old club, which include a comfortable clubhouse and two sets of target butts with four targets in each butt. In falling heir to this shooting plant, the new organization starts with every prospect of becoming one of the most active in that section of the country.



Care of Government Property

I DESIRE to call the attention of rifle clubs and schools accountable for Government property to my remarks in a previous issue of THE AMERICAN RIFLEMAN in regard to the care of property and accountability therefor. Rifle clubs and schools are required to take care of all the property issued to them as any damage or loss not occasioned by ordinary wear and tear is charged against the club. It happens occasionally that rifle clubs disband and that the property finally is turned in to a Government arsenal. It is found sometimes that the rifles have not had proper care as the barrels are found to be rusty and pitted, or parts are missing. In such cases it is necessary to call on the club to pay for the cost of repairs. If there is no money in the club treasury it is necessary for the principal on the bond to pay these charges. A great deal of this trouble can be avoided if the club fully realizes the value of the property in their possession and will see that the property is properly taken care of and that rifles are thoroughly cleaned and properly packed for shipment.

Most of these cases occur with clubs that gradually disband, leaving the property stored for

a considerable time without taking prompt action to return the property to an arsenal. It sometimes happens that only one member of the club can be found who knows anything about the property and when he secures it and packs it for shipment it is found that the rifles and considerable other property have been ruined through neglect. When this property is received at the arsenal it is examined and if it appears that the property has been neglected the club is required to pay the cost of repairs. A case has recently come to my attention in which the rifle club, after building a club house and installing a range, found that their club house had been broken into and some of the property stolen. This occurred a second time, and recently someone burned the club house, destroying all the property that remained. The funds on hand in the club treasury were used to build the club house and establish the range, thus leaving the club with no funds to rebuild or to pay for the lost property. All rifle clubs should insure the government property in their possession if there is any likelihood whatever of loss.

KRAG AMMUNITION

There is no more Krag ammunition at any of the western arsenals. Purchasers of this ammunition, or of any kind of ammunition should specify in their orders whether they desire to have the ammunition shipped by express or freight. When shipping instructions are omitted this office uses its best judgment, but in order to make no mistake it is preferable that purchasers shall specify the method of transportation.

"RIFLE MARKSMANSHIP"

The publication, *Rifle Marksmanship*, has been revised and is now published in two pamphlets, namely, "Training Regulations, No. 150-5" which covers individual instruction, the price of which is ten cents (10c), and "Training Regulations, No. 150-10," giving the courses to be fired and instructions for range practice and operation, the price of which is five cents (5c). These pamphlets can be purchased from this office or from the Superintendent of Documents, Government Printing Office, Washington, D. C. Stamps may be sent to this office in payment for these publications instead of other forms of remittance.

KRAG CARBINES

The Krag carbines available for sale are on hand at Rock Island Arsenal. The shipping weight of these carbines is twelve pounds each. Purchasers who desire shipment made by parcel post should ascertain from their postmaster what the cost will be to ship carbine by parcel post and forward stamps to this office to cover parcel post charges, and insurance, in addition to bank draft, certified check or money order for \$4.00 sent in payment for carbine.

It may be interesting to riflemen, who have .22-caliber rifles with worn out or rusty barrels to know that these barrels can be relined and very good results obtained at less than the cost of the new barrel. I have had three .22-caliber barrels relined during the last few years and in each case the result was excellent, the accuracy being equal to or better than that of the original barrel when new. The work was done by C. A. Diller, of Dayton, Ohio, who makes a specialty of this work. There are many other gunsmiths in various parts of the United States who also do this work.

SPECIAL WORK

This office has received an occasional request from riflemen who have a fine piece of walnut on hand and who desire to send this piece to Springfield to have a stock made on the lines of the 1922 pistol grip stock. Usually this request cannot be complied with as most of the stock blanks furnished by commercial firms would not be of the proper size to fit in the machines used for making stocks at Springfield Armory. This would necessitate the making of special devices for holding the stock blanks while being turned and would increase the cost to such an extent as to make it inadvisable to have this work done at the Armory. The Armories are equipped to do certain work, but are not well equipped to do general gunsmithing and all kinds of special work, consequently the expense of special work is usually greater than if done by a commercial firm which makes a specialty of doing such work. For these riflemen who desire to do part of the work of making the stocks themselves, we can furnish a rough turned stock made on the same pattern as the 1922 stock without cut for barrel, receiver and magazine. We cannot, however, furnish stocks not turned but with cuts for barrel, receiver and magazine, because in the process of manufacture at Springfield Armory these cuts are made after the outside of the stock has been turned and to reverse the process would require the making of special tools and fixtures. The price of the rough turned stock without cuts is \$5.84. Requests are occasionally received for stocks partly turned or partly finished and with dimensions varying from the dimension of the 1922 stock. Such stocks cannot be furnished unless made by hand and this is a very expensive proposition. All stocks made at Springfield Armory are turned on lathes in which a model stock revolves at the same rate as a stock blank and regulates the depth of the cut taken by the tool. The only way in which stocks could be made by machinery differing in dimensions would be to make up a special stock form as a pattern.

We cannot furnish rifle barrels of various weights or build to specifications other than those on which the regular barrels are constructed, nor furnish partly made barrels. Special work of this kind can be done by commercial firms, such as the Winchester Arms Co., Remington Co., Griffin & Howe, and the Hoffman Arms Co. There are no doubt many other gunsmiths who make a specialty of doing work according to the purchaser's specifications. Requests have been received from the Winchester Model 52 fitted with the new type of stock as illustrated in advertisement appearing in THE AMERICAN RIFLEMAN. I am advised that these stocks will not be ready for distribution for several months. Notice will be published in THE AMERICAN RIFLEMAN when they are available.

WINCHESTER RIFLES

The Winchester, .22-caliber, single shot rifles that we have for sale at \$18.80 are the same type as issued to rifle clubs, but they may be had chambered either for the .22-caliber short cartridge or for the L. R. cartridge. Purchasers should specify the type of rifle desired. All these rifles are new and the price of \$18.80 includes packing charge.

THE DOPE BAG



**A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS
ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL**

**Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolvers: Major J. S. Hatcher
Shotgun and Field Shooting: Capt. Charles Askins**

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Two Views of the 'Scope Question

By Townsend Whelen

SO FREQUENTLY as to become almost commonplace, riflemen are asking for a telescope sight which will give equal satisfaction at game or at targets. Strange to say, no one has yet deliberately attempted to make a glass which will combine the qualities demanded by the marksman and the hunter. At present the two types of glass are radically different, both in optical properties and mounting systems.

Meanwhile, probably the best way to shed light on this vexing question is to discuss the essential differences between target and hunting scopes. Here are the distinguishing characteristics:

Target Telescopes. High power (5 or over), small field, small exit pupil, and fine cross hairs. Almost always made with a long, thin tube of uniform diameter. Examples: Fecker and Winchester. Mountings must have fine adjustment for half minutes of angle ($\frac{1}{2}$ inch at 100 yards), and the movement of elevation and windage adjustment must be positive, so that, for example, if a shot be four inches low and two inches to the right at 200 yards, the adjustments can be moved positively to put next shot exactly where desired. As the tube is long, the mounts can be affixed anywhere to it so they are at least six inches apart, and thus the mounts can be located where attachment to the rifle is practicable. The location of a telescope on any rifle is determined by its eye relief. If the eye relief is two inches, the scope must be mounted so the eyepiece will come two inches from the eye when the latter is in the firing position. With a target telescope you can do this on almost any rifle because the tube is long enough to let you attach the two mountings to the barrel and still have the tube extended over the receiver and far enough to the rear to bring the eyepiece in the correct position. Often, when the eyepiece is at the correct position the tube will interfere with the opening of the bolt handle, as on the Springfield, but this makes little difference, as these scopes are almost always made with sliding mounts, and the telescope can be pushed forward to open the bolt, and pulled back again to position for each shot.

Target telescopes and their mounting are fine for target shooting as they permit of very accurate definition and aiming, and they can be easily adjusted for elevation and windage for every shot just as one adjusts a metallic micrometer sight. They have also proved very satisfactory for woodchuck and squirrel shooting because this form of shooting does not require the very quick catching of aim, very rapid fire, or

an outfit that has to stand very hard knocks. Target telescopes and their mounting as above are worthless on a big game rifle because:

1. The field is too small. When rifle is thrown to the shoulder the game is not always included in the field and one has to poke around to get the game in the field of view. Too slow.

2. The exit pupil is too small. When the rifle is thrown to the shoulder one may not see through the scope at all, but may have to raise or lower his eye, or move it to the right or left to see through the scope.

3. Imagine with running game having to push the scope forward to open the bolt, and then pull scope to the rear again before firing. Or even on other rifles, the scope slides forward a little on each shot and has to be pulled to the rear before firing again.

4. The scope and its mounts are too delicate and complicated to stand the knocks of the wilderness, even if the greatest care be taken.

For everything except big game hunting the target type of telescope is much the best. For big game hunting it will not do at all. A hunting telescope, on the other hand, is no use for target shooting, and is not as good for woodchuck shooting as the target glass.

The hunting telescope, that is, a glass for big game hunting, quick shots, shots at running game, and shots in poor lights, must be a very different instrument optically from the target telescope, and being so different optically it will be different mechanically also. The best of such telescopes are characterized optically by large field, and large exit pupil. Mechanically, they have a large tube, enlarged funnel shape at rear (and sometimes at front) to contain larger terminal lenses, and the tube is very short (sometimes not over nine inches). In order to assure surely finding the game in the field of view when the rifle is thrown to the shoulder this field of view should not be less than ten yards at 100 yards, and preferably more. In order to insure that the eye will quickly catch the field when the cheek is placed to the comb of the stock the diameter of the exit pupil of light that comes through the eyepiece should not be less than seven millimeters, and preferably more. A telescope of such characteristics and with a good luminosity cannot well be made with a magnifying power much over four diameters. Most of them are about three diameters. The construction of the glass and its lenses must be such that it will stand the recoil of modern high velocity rifles. Some much advertised sights will

not do this. The only ones that we have tested sufficiently to be able to say positively that they will stand it are those made by Zeiss, Goetz, Hensoldt, Belding and Mull, and Fecker. (Suitable mounting for the last two have only been worked out for single-shot, side-ejecting, lever-action rifles, not for bolt-action rifles.)

This hunting telescope must be correctly placed on the rifle if it is to be of any use. The glass must be directly above the bore of the rifle (never to one side), must be as low down as possible so as to be nearly in the same line of aim of metallic sights (this is limited in bolt-action rifles by the turn up of the bolt handle). The eye relief in such telescopes will be about three to three and one-half inches. To get the eyepiece in correct position so it will be about three and one-fourth inches from the average position of the eye in aiming requires a few minutes of experimenting by the individual. On Mauser and Springfield bolt-action rifles this position for the eyepiece is about in a vertical plane passing about half an inch in rear of the safety lock on the bolt. Place or hold a hunting telescope in this position and you will find what a mounting problem you have. At first it would seem that you could put the rear mount on the bridge of the receiver, a la the Germans, but you can't do this and have the eyepiece come in the correct position, because the funnel-shaped portion of the tube is above the bridge and you cannot attach a mounting to this funnel-shape.

Anyhow the German mounts are entirely impossible. They are made of soft steel and the legs which go into the bases are square. Any wear or upset which occurs in this soft steel (and it does occur very quickly) will result in wear in any one or all four of the sides of the square legs, throwing the scope way off. If any adjustment is provided for windage it is by straining the tube of the telescope over. I don't want any straining done to the tube of my telescope.

To cut a long story short, absolutely the only satisfactory mounting that is made that I have found satisfactory on a hunting rifle is the Noske mounting. I refer to the mounting with micrometer adjustment for windage only. I have found this extremely satisfactory when used with the Hensoldt $2\frac{3}{4}$ -power telescope. I am now endeavoring to find out if it can also be applied to the Goetz two-power Miniature Certar telescope. You get windage adjustment in the mounting, and elevation adjustment in the movable reticule in the telescope itself. This mounting will stand recoil and absolutely stay put. It is not positive in its adjustments like the Winchester target mountings. That is to say you cannot move your point of impact a positive amount from shot to shot. But you can get your scope absolutely adjusted in ten shots or so, and then it will stay in adjustment through fair weather and foul, literally for months at a time. It is very nearly fool proof.

HANDLOADING FOR THE .303

WOULD like to ask you in re handloading .303 British ammunition. Am ordering primed cases and Mark VI, 215-grain bullets from J. R. Mattern, of Julian, Pa.

Have on hand plenty of Pyro powder, which I accumulated (while I owned a Springfield) by reducing the loads in service cartridges and reloading with Krag bullets.

What I want to know is: How much Pyro powder should I use to give me a fairly accurate load for 200 yards, or for a velocity of 1,200 to 1,400 foot seconds, using the Mark VI, 215-grain ball? G. W. P., Hastings, Fla.

Answer (by Major Whelen). I think that about thirty grains of Pyro powder is about the smallest charge you can use satisfactorily in the .303 British cartridge with 215-grain bullet. It will give about M. V. 1,600 f. s. I doubt whether you can satisfactorily deliver 215-grain bullets at velocities as low as 1,200 f. s. I think the bullet will keyhole. In charges below thirty grains of Pyro, the pressure will not be high enough to burn the powder completely, the accuracy will be poor, and the fouling will surely be corrosive.

Krag Reloads

WILL you please give me two or three of the best reduced loads for the 30-40 (Krag)? I understand Maj. Whelen has worked out a number of these loads, some of which are very accurate. Would like to use a 150 grain cast bullet, Schuetzen Smokeless powder, and obtain about the same range and power as a 25-20 gives.

Where can I obtain a suitable Ideal reloading tool? R. L. R., Fairmont, W. Va.

Answer (by Maj. Whelen). By far the best reduced load for the Krag rifle consists of: Bond Bullet No. A-311870-150 grains, cast one part tin to ten parts of lead and sized to .311 inch. Powder charge should be 10 grains weight of du Pont Schuetzen, No. 75 or No. 80 powders, preferably the latter. The neck of the case should be resized so as to be .311 in. inside, and the sharp mouth of the case should be slightly chamfered. This load, when properly made up, should shoot steadily into about a three inch circle at 100 yards, and in calm weather is suitable up to 300 yards. The bullet should be seated only to cover the two lubricating grooves nearest the base.

The best tools are now made by the Modern-Bond Company, Wilmington, Delaware. They will send you a small loose leaf handbook of tools for ten cents. You will need all of the following tools for reloading and making bullets. Bond Model B Reloading Tool, complete,

cal. 30-40 Krag	\$10.50
Bullet Mould for Bullet A-311870-150 grains	4.00
Bond Dipper for casting bullets60
Melting Pot (any hardware store) Bond Powder Measure	10.00
Bullet Sizer and Lubrication, complete with .311 inch die	12.00

The latter implement is practically absolutely necessary, although those who like to encourage one by telling how cheaply reloading can be done say that you can get along without it.

CONCENTRATING SHOT

HAVE read with a lot of interest your article in the RIFLEMAN of November 15th, and it has brought to a head a discussion which a friend of mine and I have been having for some months. Hence, we are putting the questions up to you.

When I was a boy (a long time ago) I used to see the men load their old muzzle loaders (shotguns) with the powder, and then with the shot done up in a little cloth bag. They claimed it gave them greater range and closer pattern, and said the bag did not break at the muzzle, but made part of its journey as practically a ball.

What is there to this? Could we load our shotgun shells like this, and if so, should we tie the bag shut or only fold it over, and what material should the bag be made of? Is it a practical proposition to pour melted paraffin about a shot charge to give greater range and closer pattern? I don't mean to pour it while in the loader shell, but to cast the paraffin and shot in an old shell and then load it. Have heard of this, but been afraid to try it.

We have never loaded any shot gun shells, but we do reload rifle and pistol stuff. Due to the good people who are running this land of the free, and trying to abolish everything but Mah Jong and Petting Parties, we have trouble in getting powder, but a while ago after a lot of effort and time we managed to get two pounds of Common Black from the Frankford Arsenal, Philadelphia, through the Director of Civilian Marksmanship. We intend to reload 32 cal. pistol cartridges. Now, can we use this powder to reload our paper shot gun shells with? We asked for Common Black, and were billed common black, but the powder question today is queer. If it is O.K., can we use three drams in a 12-ga.? Ram it down and treat it as we used to treat black powder? F. J. L., Albany, N. Y.

Answer (by Capt. Askins). I guess you could load shot in a muslin bag if you wanted to.

Take common bleached muslin, a little larger than the bore of the shell, put the shot in, leaving the bag loose enough to force shot down part at a time. You want the bag loose enough so that it can expand a little after it gets out of the muzzle. Fold end of bag down and don't tie it unless you want all of the shot to remain in the bag until it strikes.

No harm about pouring paraffine over the shot, or you can make a mold for the missile out of an old piece of shell, stopping up one end, putting in the shot and then the paraffine, pushing the charge out when it gets cold. It ought to have some effect in keeping the shot together. But remember that some of this paraffine is going to melt.

I believe the best way to get a close pattern which will maintain itself to long ranges is the scheme hit upon by Capt. Dillin for loading buckshot. He tied his buck shot together with a string, cutting a slot into the pellet, putting the string into the slot and hammering the lead around it. He says the string doesn't break, and the pattern width is only equal to the length of the string. I believe that thin, pliable wire would be better than the string, as not taking up so much room in the case. Take two wires, each about two feet long, and attach them in the middle so that they cannot get apart; then take B. B. shot and attach them an inch apart. Your spread of shot at one hundred yards will only be this two feet, according to the captain. The thinnest of wire would do for the shot have little tendency to fly apart, that is they would not exert enough force to break a wire or a thin silk line.

Yes, if you have common black powder you can load anything you like with, and you certainly can load three drams of it and hammer the load if you want to.

COMBINATION SIGHTING EQUIPMENT

I AM in the field for a rifle suitable for long range target shooting and big game hunting. Answers to the following questions will aid me greatly in choosing a rifle.

Excluding the heavy match barrels, name in order of accuracy six of the most accurate rifles in .30 caliber and larger.

Which one is the most suitable for a target rifle? A large game rifle? for both purposes?

Will the Winchester 5-A scope improve a person's shooting at long range? In fitting the 5-A scope blocks to the Springfield, does it obstruct the use of the regulation sights? Can the regulation sights be used freely when the scope is mounted? Do the offset adapters have to be used in fitting the scope to the Springfield?

If by obtaining the 5-A scope and Springfield rifle through the N. R. A. will the War Department, or the N. R. A., as it may be, fit the scope to the rifle? What will be the cost?

Why do cartridges become less accurate with age? R. A. Adamston, W. Va.

Answer (by Maj. Whelen): From your point of view by far the best combination target and hunting rifle is the Springfield sporting type .30 caliber, with Model 1922 pistol grip stock; price to National Rifle Association members, through the Director of Civilian Marksmanship, \$50.84, including packing charges. This rifle has a Lyman No. 48-B receiver sight.

It is hardly practicable to use above telescope in conjunction with service sights, and still have the service sights available for use, because the rear dovetail block for the telescope should be mounted on the fixed base of the rear sight. But the telescope can be mounted on the above rifle, on top of the barrel, and when the telescope is removed the Lyman No. 48 sight can be used. To have telescope so mounted, order both rifle and telescope sent to a firm skilled in mounting it. This work is not done at Springfield Armory as the overhead on special handwork of this kind is so high as to make the cost prohibitive.

Offset adapters can be used, and with them both sights can be used without removing the

telescope, but no intelligent rifleman would consider using them for an instant, because with the telescope offset to the left the check is not in contact with the stock in aiming, a steady firing position cannot be assured, and hence the accuracy of using the telescope is entirely nullified.

To use a telescope sight with any degree of success a man must have studied telescopes, their mounting, and their adjustment, and know them from "A" to "Z". An informal and skillful rifleman can usually make groups at 500 yards about five inches smaller in diameter on an average than he can make with metallic sights, and proportionately at longer ranges.

Lead bullet ammunition deteriorates in accuracy with age because of the drying up of the bullet lubricant. Black powder ammunition also sometimes deteriorates through the caking of the powder. American smokeless ammunition does not deteriorate with age until after a long number of years the cartridge case splits at the neck from season cracking.

A COMMENT ON KILLING POWER

IN the January 1st issue there is an article by Townsend Whelen regarding the killing power of various loads. He mentions shooting a woodchuck with the 250 and the bullet not going through the head. This is more than I am able to understand. Myself and partner usually spend two days each week the year round hunting some kind of game and of course in the summer time there is nothing else to shoot but woodchucks and none have been found to kill unless the bullets were properly placed. Also, the 22 cal. rifles using the Western Marksman or the Peters Outdoor Tackhole have killed every time the bullets were shot into a vital spot. And they went clear through, too. I can send you some pelts to prove this statement if you want them. For shooting chucks we prefer the Savage N. R. A. And I would like to know how some of these fellows see a woodchuck at 75 or 100 yards. And also why it is necessary for them to stay that far away from their dens. I have had a woodchuck come within 10 yards of me when sitting quietly on a log. I understand that the woodchucks in central Ohio get as large as any in the country. We tried the hollow points and found that they did not kill any quicker than the Marksman or Tackhole. One of these cartridges placed in the neck, spine, or the head will kill almost instantly every time. We always shoot them at about twenty-five yards. I would like to know why some of our brother rifle cranks always advocate such large caliber rifles on American game. One of our famous Arctic explorers (Stefansson) told me himself that he used the 6.5 Mannlicher to kill every thing from polar and grizzly bears to moose. And his life depended on the meat which he shot, too. R. F. K., Columbus, Ohio.

Answer (by Maj. Whelen). I did not attempt to explain why that 100 grain bullet did not come out of the woodchuck's head. I left my readers to infer the reason for themselves. Also I might mention that in Panama in 1916 I shot a full grown otter in the mouth at 10 yards as he was facing me, with Springfield rifle, 170 grain Newton protected point bullet, M. V. 2600 f. s., and no particle of the bullet came out of the otter's body. What do you make of that?

It is perfectly true that the .256 Mannlicher, with proper bullets, is sufficiently powerful for any large game on this continent when in the hands of a good shot. This has been demonstrated so many times that there is no doubt of it. But it is also perfectly true that occasionally any rifle will fail to kill instantly, and naturally such failures are less with a more powerful arm. You ask why some men advocate such large caliber rifles on American game. They might also truthfully ask why some rifle cranks use such small caliber rifles on American game when the larger rifles kill quicker and are therefore more humane and sportsmanlike.

STILL HAVE ON HAND A FEW FACTORY BULLETS and NEW CASES AT HALF PRICE OR LESS

We still have a fair supply of new factory ammunition components in the calibers listed below. These are A-1 grade having been supplied by Winchester, Remington, U. S. Cartridge Co., and Frankford Arsenal for ballistic tests, hence are very best quality. They are surplus stock and are priced to move them out to your advantage.

Act at once if your caliber is here as we have sold over two tons of these components in the past three months, and this remaining supply will not last long. As a guarantee of quality of these goods or our business methods, I can refer you to the Editors of this magazine.

30-30 NEW EMPTY CASES

All new, clean and bright; Winchester make; packed in factory boxes of 25.

The necks of these and all other new cases hold bullets firmly enough to prevent their receding when in rifle magazines.

Price, \$1.62 a hundred

303 BRITISH EMPTY CASES

All new Winchester Cases, primed, durable, reloadable, with center flash hole, taking American primers. No cheap foreign stuff.

Price, \$1.80 a hundred

303 BRITISH BULLETS

Standard Mark VII, 174-grain, .311-inch diameter, with two grooves. Full-Jacketed only. (Spitzer) Grade A-1 target bullets.

Price, 80 cents a hundred

303 BRITISH LOADED CARTRIDGES

A few standard Winchester Mark VII, Vel. 2390 feet. 174-grain pointed bullet.

Price, \$3.00 a hundred

7 M. M. EMPTY CASES

All new Primed Cases, Winchester make, in factory boxes of 25. These standard American cases are worth ten times the cheap foreign ones. They have center flash holes and take American primers—are durable and re-loadable.

Price, \$1.80 a hundred

6.5 M.M. EMPTY CASES

New, U. S. Cartridge Co's make, with American primers; reloadable.

Price, \$2.00 a hundred

401 WINCHESTER SELF-LOADING BULLETS AND EMPTY CASES NEW

New Cases, Winchester, in regular factory boxes of 20.

Bullets, 200-grain Winchester Soft Point.

Bullets, 250-grain Winchester Soft Point.

These bullets measure about .4064-inch in diameter.

Price, \$1.35 a hundred

30-1906 NEW EMPTY CASES

All new primed cases, Winchester and U. S. Cartridge Co's makes, in boxes of 25 or 20. New cases are always better than fired ones.

Price, \$1.80 a hundred

38-55 NEW EMPTY CASES

All "H. V." smokeless type, with indented ring to hold bullets from receding; in boxes of 25.

Price, \$1.63 a hundred

38-55 BULLETS

All soft-pointed; weight 255 grains; diameter, .375-inch. Standard Winchester and Remington "H. V." bullets.

Price, 95 cents a hundred

7.65 M.M. EMPTY CASES

New primed cases of Remington and U. S. Cartridge Co's makes. They have center flash holes, take standard American primers, and are durable and reloadable. Cheap foreign ammunition has Berdan primers.

Price, \$1.13 a hundred

7.65 M.M. BULLETS

Full-jacketed only, weight 154 grains, diameter .311-inch. Standard "fat" Spitzer point.

Price, 80 cents a hundred

These bullets may be used in 303 British full or reduced loads; also in tightly-bored 8-m.m. rifles. The 303 Savage will use this 154-grain Spitzer perfectly as it is the same diameter and length as regular Savage bullets.

35 WINCHESTER SELF-LOADING BULLETS AND NEW EMPTY CASES

New Cases, Winchester, in regular factory boxes of 50.

Price, \$1.50 a hundred

Bullets, 180-grain Winchester Soft Point, about .351-inch in diameter. (too small for use in other .35 calibers).

Price, \$1.35 a hundred

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New Cases, Winchester, in regular factory boxes of 50.

Price, \$1.50 a hundred

Bullets, 165-grain Winchester Soft Point, about .3215-inch in diameter. Also useful in larger-bored 8-m.m. rifles.

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Components of Self-Loading cartridges are very rarely available to handloaders. Anyone owning a S. L. Winchester should not overlook this chance to stock up, even though tools are yet to be bought. The prices are right.

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The Cases are bright, clean and in factory condition, ready for loading. They fit all rifle chambers easily, never sticking, and they hold bullets snugly. They align with the rifle bore because they have no distortion from faulty resizing. At these prices, it pays handloaders to use new cases exclusively instead of fired empties.

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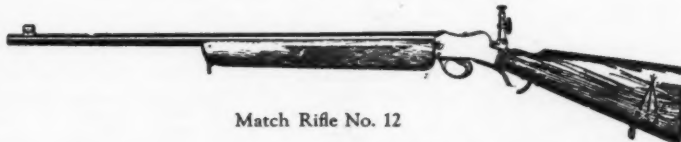
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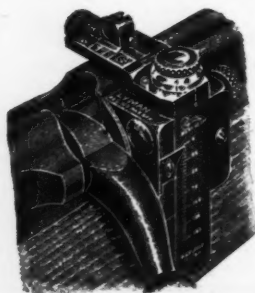
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For best indoor and outdoor target results the champions use No. 17 hooded front sight with aperture underneath. Price No. 17 special for Springfield, \$4.00. Other rifles, \$2.50.

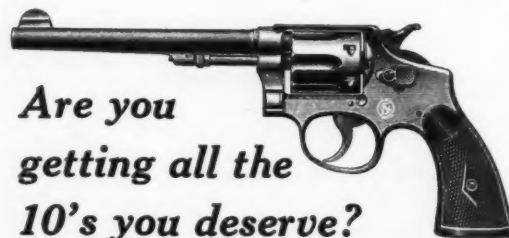
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No. 17
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Have you ever considered the effect these things have upon the arm in the interval between the trigger release and the departure of the bullet?

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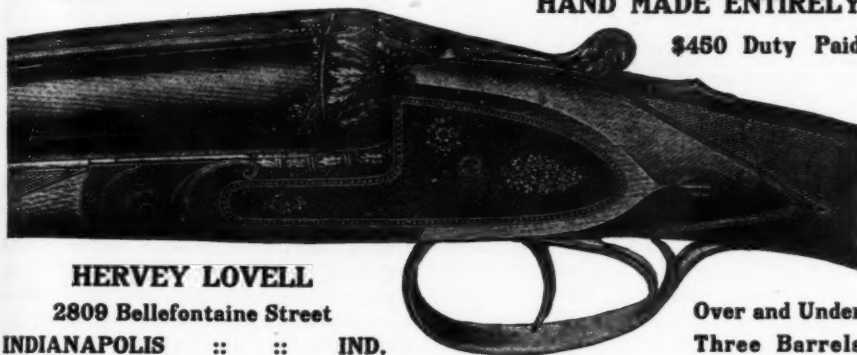
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Were again in the lead at the Metropolitan Matches, New York City. The Championship was won by John Wallace Gillies, using a ten power Fecker scope, making a world's record of 495 x 100 at 100 yards. The Handicap was also won by John Wallace Gillies using a ten power Fecker scope, score 994 x 1000.

In the Metropolitan Re-Entry Matches the first six places were won with Fecker scopes.

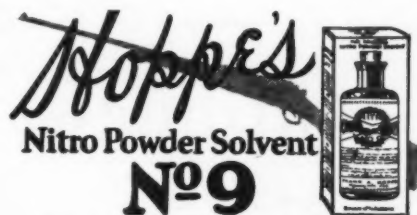
In the Metropolitan Handicap, of forty entries twenty-four used Fecker scopes.

There is a reason for the number of Fecker scopes at the top of the list. Get behind a Fecker scope and enjoy some of the honors.

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FOR SALE—22-cal. Stevens Conlin Model, 10-inch barrel, nearly new, \$20.00. Allen & Wheelock 30-cal. Pepperbox which killed two men, \$10.00. .31 Colt percussion, 6-in. barrel, \$7.50. .32-cal. rim-fire Smith & Wesson, shooting condition, \$7.00. Another .22 cal., \$7.00. Another not in shooting condition, \$5.00. .31 Colt percussion, 5-in. barrel, in fine shooting condition, in plush-lined mahogany case with powder flask, double bullet mold, Colts in cases with accessories are rare, \$22.00. Smith & Wesson Exhibition revolver, cal. .38 S. & W., in rosewood case with holes for cartridges. The revolver is a superb example, being entirely chiseled in scrolls, enclosing a medallion Greek head, and showing traces of having been picked out with gold, handsome pearl grips. The frame has been silvered. First reasonable offer gets it. We can secure practically any antique or modern arm that you may need. If you are in want of any modern arm or antique one, write us giving us a complete description of what you need and the price you will pay. Should we obtain such an arm at any time we will inform you. This does not put you under any obligation to purchase, nor are you required to pay for such service. STOCKBRIDGE SPORTING GOODS CO., Stockbridge, Mass.

FOR SALE—2,000 antique firearms at reasonable prices. Send six cents in stamps for 24-page price list. Let me know your special wants along any line of antique firearms. I am always anxious to buy single specimens or entire collections. Joe Kindig, Jr., 336 West Philadelphia Street, York, Penna.

WANTED—Texas Colt concealed trigger and Walker-Colt lever rammer, both made in Paterson. Colt Dragon "Address Sam'l. Colt" or made by Colt at Hartford. .44 S. & W. Russian Army model, single-action, rim-fire. .22 S. & W. single-shot, Model 1891, single-action. Winchester 1873 .44-40 with brass receiver. Winchester 1866 .44 rim-fire. Copy of Sawyer's "Our Pistols and Revolvers," Vol. 2, J. C. Harvey, 872 Main St., Worcester, Massachusetts.

WANTED—Sharps rifle, Ballard rifle, Maynard Model 1882 rifle, Marlin Model 1881 rifle with top ejection. .38-caliber, single-action S&W revolver, .32-20 Colt revolver, .32 Colt New Police revolver, .22-caliber, 3-inch Stevens pistol, cartridges or shells for .45-70 and for .40-50 bottle-neck Sharps rifles. G. H. Lehle, 3810 Broadway, Chicago, Ill.

FOR SALE—Obsolete gun parts. Hammer, gun and musket tubes, gun locks, etc. F. Surkammer, 54 W. Lake St., Chicago, Ill.

Terms

COLLECTORS wishing to fill gaps in their exhibits and riflemen desiring to dispose of obsolete weapons will find this an excellent medium for purchases, sales and exchanges.

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Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of \$1.00 per inch or part thereof. No advertisement for less than \$1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.

Business cards and display in this column accepted at the rate of \$2.50 an inch. No space less than an inch sold for display.

"FIREARMS OF YESTERDAY" are a specialty with "THE OLD GEORGETOWN GUILD." At all times there are on hand a large number of specimens from which to select examples of early American, Confederate States' and European firearms. Tell us what your collection needs. We will probably be able to help you. The Old Georgetown Guild, 2722 M Street, N. W., Washington, D. C.

FOR SALE—Caliber .44 Starr cap and ball revolver, new condition, \$9.00. Caliber .53 Jenks percussion carbine, patent primer lock, dated 1847, in new condition, \$8.00. Large single-shot percussion pistol, 11/16-inch bore, over-all length 20 inches, in good condition, \$5.00. Caliber .44 Remington cap and ball revolver, \$4.00. Experimental model cal. .58 rim-fire Springfield musket; first alteration model of the Civil War muzzle-loaders and forerunner of the single-shot Springfield. Stamped as being gun No. 2. Offered in fair condition, \$10. Spare revolver barrels, cal. .36 Remington cap and ball, bores in very good condition, each \$1. Spare cylinders, cal. .36 Colt cap and ball, new condition, each, \$1.00. Cal. .36 Colt cap and ball frame with action, each \$2.00. B. K. Wingate, 448 Birkle Ave., Bethlehem, Pa.

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Weight 5 lbs.—warm as 30 lbs. of blankets. No hooks, strings or other crude contraptions.

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We have equipped expeditions to all parts of the earth and know your needs from actual experience in the field. Let us furnish estimates.

Write for descriptive circulars FIALA High-Grade .22-cal. Combination Rifle and Pistol, with 3 barrels, a \$30 Rifle for \$18.

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One .450 Rigby Double Barrel Hammer Express Rifle, in excellent condition, \$75.00. One Double Barrel Hammer .303 Holland & Holland English. One of the very highest grades and a splendid example of the best English workmanship, well engraved, safety locks to hammers, in perfect condition, \$150.00. Box R. A., c-o "The American Rifleman."

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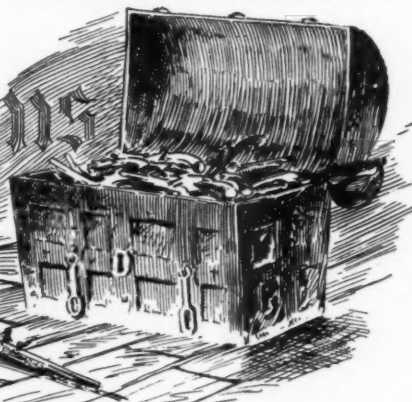
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The Arms Chest



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THE uniformly excellent returns from advertisements appearing in the classified columns of THE AMERICAN RIFLEMAN make it a most satisfactory and productive medium for the disposal of surplus shooting equipment, or the acquisition of special types of firearms.

Free Insertions. Each subscriber is entitled to one insertion of one-half inch, when his subscription is paid up for one year. It is necessary only to write or print the text plainly, noting thereon the date subscription was paid. These advertisements will appear in the first available issue and should be in publication office two weeks prior to the following publication date.

Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of \$1.00 per inch or part thereof. No advertisement for less than \$1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.

WANTED—Illinois civilians to affiliate with their local rifle club and have their club affiliate with the Illinois State Rifle Association. We want at least seven new men who have never attended National Matches to get in, and earn a place on the team. Any old-timer will be glad to give a helping hand. For information and application blanks, ask L. M. Felt, 132 S. Parkside Ave., Chicago, Illinois.

FOR SALE—256 Mauser, finished by Kosholek for Western-Newton cartridge, tight chamber, groove diameter exact size of bullet, 8 1/4 inch twist for 160-grain bullet or shorter, finest engraving and wood, grip carved floral design, horn trigger guard, grip cap, and butt plate, well on under side of stock, has finest engraving on cover, half-octagon barrel with raised matted rib, silver bead front with folding peep rear, has windage and elevating adjustment, 4 1/2 x Voightlander scope, box of handloads and 40 160-grain bullets, new, shot ten times, can furnish fifty-yard 5-shot group 13/16-inches, finest and most accurate rifle obtainable, all around rifle. \$150. F. H. LANFERMAN, 7063 Greenview Ave., Chicago, Ill.

WANTED—Old gun catalogues. Remington rifle, rolling block action. Colt .22 Automatic. **FOR SALE**—6-shot revolver .44-40-cal., good order, \$5.00. Colt cap and ball .44, inside of barrel smooth-bored, good, \$5.00. Remington cap and ball .38-cal., good, \$5.00. Starr Revolver, fair order, \$2.00. Bason Revolver changed to .38 rim-fire, fair order, \$2.00. Cylinder for S. A. 45 Colt, good, \$1.50. Shotgun crimpers 10- and 12-gauge, new, \$1.50 each. Books: "Field Cover and Trap Shooting," Bogard, 1874, \$1.50; "American Wild Fowl Shooting," by J. W. Long, 1874, \$1.50; "Rifled Ordnance," by Lyle Thomas, 1864, \$1.50; "Naval Gunnery," by Sir Howard Douglas, London, 1855, \$2.00. Fred Wainwright, Grayling, Mich.

FOR SALE OR TRADE—Colt Police Positive Target Revolver, 22 short, long rifle; 6-inch blued; checked walnut grips; gold bead front sight; good condition. Swivel in butt. I have a very fine target made by this gun at the Colt factory recently. Will guarantee accuracy. Also extra front sight, Helser holster, web belt, etc. Outfit would cost \$40.00 to duplicate new. Price \$25.00. U. S. A. Marching Compass, with case, new, \$1.00. **WANT**—Colt single-actions, .44- and .32-20, both with 7 1/2-inch barrels. Colt .38 Police Special, 4 inches. Colt .22 Automatic. W. J. Winter, 323 South 6th St., Goshen, Ind.

WANTED—Winchester No. 52 or Springfield .22-cal., bolt-action; Colt Officers' Model or New Service Target; Remington 50 pistol. Fecker or Winchester scope; rifle barrel only, .50-cal. in good condition. **FOR SALE**—S & W .22 target pistol, nickel, 8 inch, Stevens 44 1/2 .22 caliber, new, tapped for scope. Selected barrel for new Springfield '06. Savage 1909 Repeater .22 caliber and case. S. & W. .38 Special Target Model. Very fine Remington Hepburn Schuetzen .32-40 target rifle, every refinement. C. Vonnick, Box 37, Wilkes-Barre, Pa.

WANTED—A .404 Jeffries Mauser action or rifle. Action must be in best condition and reasonable. Barrel and stock no account. Walter Belstein, 1312 West Elizabeth St., Detroit, Michigan.

FOR SALE—Two new pairs of Zeiss binoculars, 7 x 50, Model Binocular, \$125.00 grade at \$100.00 a pair. I. N. Wagner, 249 Custer Ave., Youngstown, Ohio.

WANTED—A winning Civilian Team from Pennsylvania at the National Matches this fall and every shooter in Pennsylvania to correspond with C. T. Patterson, 843 Napier Ave., Laurence Park, Erie, Penna.

FOR SALE—Have too many guns. Must sell the following: .30-40 1895 Winchester, Lyman receiver peep, \$30.00. .30-06 as issued, \$25. Bayonet for same, \$5.00. .30-30 Savage Take-down, \$22.00. .405 Winchester 1895, \$30.00. 8 mm. Haezel-Mannlicher, \$23.00. 6.5 Mannlicher-Schönauer, 22 inch barrel, takedown Genuine pre-War, make offer. 8 mm. Mauser with telescope sight, \$35.00. .30-30 Remington-Lee, special rifle, \$32.00. .30-06 Schilling-Mauser, 24 inch barrel, fine engraving, single trigger, sling swivels, with Lyman No. 49, never fired, 60.00. Luger Carbine, cal. .30, 12 inch barrel, pre-War Model, trade-marked, New Condition, \$60.00. C. O. D. Parcel Post if desired. Vincent Natalish, 68 West 56th St., N. Y. City.

FOR SALE—Highest grade Rigby double hammerless ejector rifle for the .350 Magnum H. V. cartridge. Weight 9 lbs., 25 inch barrels; flat top rear and bead front sight. Extra full pistol grip stock 1 3/4 inches by 2 1/4 inches. Side lock action; top lever and safety. Sling swivels. An absolutely new and perfect weapon, only fired by me to test accuracy and regulation which is guaranteed correct. With spare sights, muzzle cover, etc., \$700.00. Rifle on exhibition at Griffin and Howe, 234 East 39th St., New York City, N. Y. Major T. D. Sloan, Fort Bragg, North Carolina.

FOR SALE—Brand new .38 W. C. F. New Service, with holster, cartridges and belt, \$25. One-half inch micrometer, \$2.50. Fairbanks Powder Scale, \$13.00. Ottway 20-X Scope, \$9. Winchester Model 52 remodeled by Griffin, \$50. Plain Ballard Action, \$10.00. **WANT**—An engraved Ballard action or a Springfield. Fred N. Anderson, 174 Lafayette Ave., Suffern, N. Y.

CLOSING OUT SALE—\$10,000.00 stock of U. S. Cartridge Company ammunition. Everything for rifle or pistol from .25 Stevens to .45-70. .250-3000 Savage at \$5.00 per hundred. All new and factory guaranteed. Write for price on what you need. W. M. Hire, Castalia, Ohio.

FOR SALE—One brand new .250-3000 bolt action Savage, equipped with Lyman Ivory bead front and peep rear and 4-X Mignon telescope with Noske windgauge mounts. Mounted by Noske, factory condition, shot 10 times, price \$70.00. A. N. Washburn, Bethel, Vermont.

WANTED—Stevens' Lord Model .25 caliber, 10 inch barrel. Must be in A-1 condition, also want antique and modern pistols and revolvers and their accessories. Henry A. Lambert, 422 Lincoln Ave., Rockford, Ill.

FOR SALE—A long list of shotguns, rifles, revolvers, pistols, loading tools and other items. Send 10 cents in stamps. P. L. Johnson, 5904 Harvard St., Pittsburgh, Pa.

WANT—Reloading tools, moulds, and resizing dies for the .30-06 cartridge and the .45 auto. cartridge. Also want Ideal Handbook. Emil Swatos, 1254 South 15th St., Omaha, Neb.

FOR SALE—Colt .22 caliber automatic pistol, extra magazine, \$25.00. L. Nuesslein, 1117 14th St., N. W., Washington, D. C.

WANTED—Ideal No. 5 or No. 6 Powder Measure, in perfect working order. H. O. Phillips, 521 Bradford St., Pasadena, Calif.

FOR SALE—A few new arms in original factory condition, never used, in factory grease; One .250-3000 Savage, Takedown, pistol grip and foreign checkered, regular \$51.00, special price \$41.00. .32-20 Winchester, Takedown, regular \$44.25, only one at \$35.00. 9-22 High power Savage 1899, Takedown, regular \$46.00, Special at \$38.00 each. 13 Remington Model 14 1/2 cal. .38 W. C. F., regular \$49.50, special at \$35.00 each. 5 more in .44 W. C. F., at \$35 each. One Remington Model 14-A cal. .32 Remington regular \$49.50, special at \$41.00. Six Winchester 1892's cal. .44 W. C. F. at \$25.00 each. Nine more in .38 W. C. F. cal. at \$25.00 each, regular \$31.75. One Winchester .32 cal. 1905 Automatic at \$38.00. Another in .35 caliber at \$38. regular \$47.50. Four Winchester 401 cal. 1910 Model, at \$47.00 each, regular \$57.50. .30-30 cal. cartridges, metal point, Western Cartridge Company make at \$5.00 per 100. 160 Luger Combination Pistol and Carbine Stocks at \$2.50 each. .25 caliber Automatic Pistol cartridges at \$2.00 per 100. One .45 Colt Automatic, \$32. regular \$36.75. As stated before all arms are in original factory packing and will be sent prepaid upon receipt of price or will be sent C.O.D. Parcel Post plus transportation charges. In case arm is sold we will return money at once. Stockbridge Sporting Goods Co., Stockbridge, Massachusetts.

FOR SALE—67 empty reloadable cases, cal. 50 pistol, \$3.25. Resizing dies cal. .45-70, .45 Colt, full length; cal. .30 Krag, neck resizing only. For use with hammer or mallet, each \$1.50. Ideal loading press, cal. .30 Krag, heavy type for bench work, with full set of reloading equipment. Slightly used, very good condition, \$15.00. Priming tool for .45-70 cases; also one for .50-70 cases, each 80 cents. Remington carbine, cal. .50-70, good condition, \$4.00. Springfield carbine, cal. .50-70, fair, \$2.50. B. K. Wingate, 448 Birkle Ave., Bethlehem, Pa.

FOR SALE—Mausers Actions and Stocks: We have a few Mauser Actions complete with either single trigger or double set trigger, with straight, turned down, or flat bolt handles at \$10.00 each. Also a few pistol grip stocks checkered, removed from Mauser rifles at \$7.50 each. We also carry in stock parts for Mauser rifles and Luger pistols. We make a specialty of repairing foreign arms but do not do restocking. C. O. D. Parcel Post if desired. Stockbridge Sporting Goods Co., Stockbridge, Mass.

FOR SALE—New Service .38-40, 5 1/2 inch barrel, Italian walnut grips, targeted by Fitzgerald, target shows 5 shot group 20 yards that can be covered by 50 cent piece. Gun brand new inside and out, with 500 Rem. U. M. C. .38-40 Lesmoke and 150 Peters Smokeless cartridges. Price, \$35.00. S. & W. 10 inch .22 cal. single shot, latest model, brand new inside and out, with 1500 .22 Long Rifle Lesmoke ctgs. \$22.50. A. L. Steltz, Warehouse Point, Conn.

FOR SALE—1903 Springfield, uses .30-06 reduced loads only, fine condition, \$26.00. Trade and pay difference if any. A. 22 L. R. Winchester Musket, never shot, No. 53 sight, for O. M. Colt's revolver, .32-20 S. & W. 1305 square butt revolver, or a S. & W. 1917 .45 cal. revolver. Must be in perfect shape. N. C. Pierce, 64 Oak Street, Norwich, Connecticut.

FOR SALE OR TRADE—30 caliber Springfield, good condition, \$20.00. Two cases, 2400 rounds, .30 caliber ammunition, \$30.00 per case. One Savage .22 N. R. A. \$15.00. **WANT** Springfield 1922 cal. .32, 52 Winchester, Winchester 5-A, Fecker or Stevens telescope sight, and .32 Colt's auto. pistol. What have you to trade? J. A. Bell, 148 E. Independence St., Tulsa, Okla.

WANTED—Good nickel steel barrel, any cal., to fit Winchester, single shot .25-35 preferred. L. N. Nicolls, 803 East Court St., Pendleton, Ore.

FOR SALE—Clearance sale on used arms. All priced to move C. O. D. Parcel Post if desired. .38-40 Bissley Colt, 4 1/4 inch barrel, blue, \$30.00. .45 Colt Single Action, 5 1/2 inch barrel, blue, \$16.00. .45 Colt, London Double Action, rod ejector, blue, checkered walnut grips, \$22.00. .455 Wadley & Scott English Service Revolver, 6 inch barrel, \$17.50. .45 Colt Double Action, rod ejector, 5 1/2 inch barrel, \$15.00. .45 Colt auto, "as issued" \$15.00. Another "Commercial" \$18. Another similar to .38 Military Colt Automatic cal. .45 at \$15.00. .38 Colt Military Automatic, \$19.00. Another \$18.00. .38 Colt Pocket Automatic, \$18.00. .380 Colt Automatic Walnut grips, \$11.00. Another with pearl grips, \$12.00. .32 Colt Automatic, nickel plated, pearl grips, \$12. .32 Savage Automatic \$10.00. .38 S. & W. Hammerless 3 1/4 inch barrel, pearl grips, \$12.50. .38 Colt Army Special, 6 inch barrel, blue \$15.00. .38 Colt D. A. Army Revolver "as issued" \$12.00. .38 Colt Officer's Model, 6 inch barrel, \$21.00. .45 Smith & Wesson 1917 \$19.00. .44 S. & W. Double Action Break Open, blue, \$16.00. .45 Colt New Service 5 1/2 inch barrel, blue, \$17.00. .22 cal. S. & W. 10 inch Target Pistol, single action, sold as action needs new barrel, rare, \$12.00. .25 cal. Browning auto. pistol, \$15.00. Stockbridge Sporting Goods Co., Stockbridge, Mass.

FOR SALE—H. M. Pope-Winchester cal. .32-40, 32 inch Pope barrel, fancy pistol grip stock with forearm checkered, cheek piece, another cheek piece that fits over cheek piece but is removable, vernier rear peep, double set triggers, attachment for palm rest, Swiss butt plate. First reasonable offer gets it. Also a .32-40 Winchester barrel No. 3 at \$8.00. 12 gauge 30 inch Ithaca barrels, both barrels full choke, never used, \$10.00. A pair of C. P. Goetz, Berlin, 8 x 26 Prism Binoculars in case, individual eyepiece focus, \$23.00. **WANT**—22 Pope barrel. Vincent Natalish, 68 West 56th St., N. Y. City.

FOR SALE—Springfield light sporter, 6 1/2 lbs. beautiful stock, anti-filch pad, Lyman 34 rear gold head front, new 20 inch barrel, very accurate \$65.00. .25-20 Winchester Carbine, new fancy stock and forearm Lyman sighted, \$50.00. Krag Sporter, fine stock, recoil pad, bolt peep, Lyman front, new barrel, \$30.00. New .22 off-hand target Stevens pistol 6 inch barrel, holster, \$9.00. Stamps for photos. Sporting stocks for Springfield and Krag rifles \$15.00 to \$50.00, according to wood and finish. Remodeling on all rifles to order. **WANT**—250-3000 Savage bolt rifle. R. D. Tait, Montague, California.

FOR SALE—38 Colt Military auto. pistol, Government holster and belt. Very good condition. Finish little worn, \$25.00. Eastman Autographic Vest Pocket Kodak and belt case. F. 6.9 Anastigmat lens. Guaranteed brand new, \$15.00. Hensoldt "Marine Dialyt" 8 power, diameter of objective 50 mm., exit pupil 6.2 mm. Leather case. Slightly used on a couple hunts. Absolutely good as new. List price, \$120.00, price \$100.00. Charles W. Bonta, Sierraville, California.

FOR SALE—"Ballard" .38-55 rifle, beautiful walnut stock, pistol grip, octagon barrel, inside in gun crank condition, outside fine, lever action, a very rare rifle, will take \$39.50, or Carl Zeiss binocular, 18 power 50 mm. Hensoldt Dialyt binoculars, cost \$155.00, discount 1/3 for cash or trade for Greener or equal, 24 power, 56 mm. Buss binoculars, same price and trade. A. L. Liss, 95 Seventh St. So., Minneapolis, Minn.

FOR SALE—.45 Colt Auto., commercial, fine condition, bluing slightly worn, heavy leather flap holster, web belt; extra magazine clip, barrel, S. S. A. flare-out stocks, hammer, ejector, firing pin; main, firing pin and magazine springs. Sgt. Thomas Instruction Book. Price \$17.00. Edw. C. Gustafson, 4670 East 55th St., Cleveland, Ohio.

SELL OR TRADE—New S. S. Winchester .38-55, with loading tools shell bullets, new and perfect. One .38-55 Colt cap and ball revolver, good condition, one .45-70 Remington Match Rifle, perfect inside, fine outside. **WANT**—Telescope sight for Winchester .32 musket. J. R. Haynes, Gastonia, North Carolina.

WANTED—Stevens Diamond Model .22 cal. 6 inch barrel, with peep sight, in excellent condition. State price. S. E. Barber, Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.

WANTED—S. & W. any caliber, with enclosed ejector rod, 5 inch or longer barrel. Will pay according to condition. Describe fully and quote price first letter. Paul Bossemeyer, Box 304, Salina, Kansas.

FOR SALE—One .22 caliber Remington auto. using the .22 short cartridges, Lyman sights, \$25.00. One .22 cal. Remington, same as above, only fancy finish, \$35.00. E. S. Arthur, Luther, Oklahoma.

WANTED—Krag rifle barrel, new, unused, as issued by the Government. Give full particulars when writing. D. A. Drew, Walville, Washington, Care Walville Lumber Co.

FOR SALE—One 1903 Springfield as issued, \$25.00. One 8 mm. Mauser Sporter \$15.00. One .303 Ross converted Sporter \$10.00. One Model 52 Winchester with Stevens 468 Scope, almost new, \$50.00. One 12 gauge double hammerless imported shotgun (sample gun) 6 lbs. 4 oz., 30 inch barrels, new, \$100.00. One 12 gauge over and under shotgun, 30 inch barrels, straight grip, oil finish stock. Both barrels full choke, double Lyman sights, double trigger. Several fine imported and domestic Trap and Field Guns second-hand, for sale, send for list. Guaranteed for one year. I can order to your measurements an over and under shotgun for field or trap. One year guarantee with each gun. Wm. F. Smith, 5619 N. 4th St., Philadelphia, Pa.

SELL—Winchester .30-30, new barrel, new magazine tube and forearm, Lyman peep rear and ivory bead front sights, good condition, \$25. Star Talbot reel, nearly new, \$12.00. New small Elgin wrist watch, \$12.00. .33 Colt Auto. Ideal reloading tool and bullet mould, \$5.00. .40-82 Winchester, good hunting condition, \$12.00. .22 short 1890 Winchester, accurate, \$8.00. .44 S. & W. Russian finger spur reloading tool and holster, good shooting condition, \$12.00. These are honest bargains for quick sale. Max Wagner, Alexandria, Minnesota.

FOR SALE—Two Model 414 .22 L. R. Stevens, tang rear and aperture front sights, practically new, \$16.00 each. One Mannlicher-Schoenauer pre-War 6.5 mm., 18 inch barrel, shot 50 times. With 25 rounds 160 grain cartridges, \$60.00. One single barrel, hammer, 20 gauge shotgun. Excellent condition, \$7.50. One Savage automatic pistol, .380 caliber. New condition, \$12.00. One 8 mm. Mauser, war relic, stock unservicable, barrel and action serviceable, \$10.00. Captain George T. Shank, Fort Slocum, N. Y.

FOR SALE OR TRADE—For Winchester Scope 5-A, as good as new and very accurate indoor Match Rifle, Remington S. S. 28 inch barrel, 34 inch sight radius, 24 inch twist for 22 short, 2 sets of folding sights in rifle, 2 fine butt stocks, hair trigger pull, soft rubber butt plates, weight 6 pounds. Has every refinement essential to a rifle except a scope. Actually worth \$30.00. Will take \$15.00. 303 West Main St., Knightstown, Indiana.

FOR SALE—Colt's New Service .44-40 cal., 5 1/2 inch barrel, holster, perfect, \$20.00. S. & W. .38 Special 6 inch barrel, target sights, holster, \$25.00. New, Colt's .38 Army Special 6 inch barrel, holster, \$25.00. **WANT**—S. A. Colt's .44 cal., in perfect condition. Scott Elliott, 816 S. Pasfield St., Springfield, Ill.

FOR SALE—New No. 1 B. S. A. Air Rifle, .177 cal., with adjustable peep rear sight, B. S. A. canvas case, 2000 pellets. Value \$37.00, sell for \$26.00. Also new .9 mm. Luger, dated 1916, with Audley holster and 200 rounds ammunition, \$19.00. Harold Flocken, 2814 Portland Ave., Minneapolis, Minn.

FOR SALE—1922 Springfield .22, fine, \$30.00. 1903 Springfield .30, fine, \$25.00. 30 Remington Pump, perfect inside and out, \$35.00. 8 mm. Mauser Sporter, good, \$20.00. I want a Fecker scope for Springfield and a set of overhead valves for Ford. H. E. MacFarland, 1353 Highland St., Columbus, Ohio.

FOR SALE—.22 Single Shot Mauser, new, Kerr sling, 3X scope, windage and elevation adjustment, checkered grip, front sight on matted ramp, will furnish dime groups, \$15.00. R. H. Lanfeman, 7063 Greenview Ave., Chicago, Ill.

FOR SALE—Colt new Service .45, 7 1/4 inch barrel, new, \$28.00. Colt D. A. .45, 5 1/4 inch barrel, excellent, \$18.00 with holster. Stevens .414, \$15.00 new. F. E. Cody, 204 West Main St., Ottawa, Illinois.

FOR SALE—.22 Colt Automatic, practically new in perfect shape with Heiser pouch shoulder holster, \$27.00. Flat back mandolin, beautiful tone, \$20.00. H. E. Priess, 5341 Murdock Ave., St. Louis, Mo.

FOR SALE—One A. H. Fox Shotgun, Grade A, with Automatic Ejectors, \$60.00. One Krag Carbine with Lyman rear sight, \$10.00. E. S. Arthur, Luther, Oklahoma.

WANTED—Ideal reloading tool and mould .45 Colt. Heiser shoulder holster with spring for Colt S. A. 7 1/4 .45 cal. Clarence B. Davenport, Sprakers, N. Y.

TRADE—Would trade .30 caliber Springfield and two cases, 2400 rounds of ammunition for same, fitted with 5-A or Fecker telescope sight. J. A. Bell, 148 E. Independence St., Tulsa, Okla.

WANTED—A Thomas or Leonard bait casting rod 5 ft or 5 1/2 ft. long, also a fly rod of the same make. State price and condition. Peter Robertson, 2 Market St., Boston, 14, Mass.

FOR SALE—Winchester Single Shot Rifle, caliber .30-40 with 27 inch No. 3 barrel, Mann-Niedner firing pin, Mann-Niedner scope base. Lyman No. 103 tang sight and No. 17 front. Folding leaf on barrel. Winchester detachable swivels and Whelen gun sling. All in new condition, fired less than 20 times. An \$80.00 outfit for \$55.00, including 100 new primed cases. Remington 1863 muzzle loader, .58 cal., bayonet, new, \$6.50. Remington .44 cap and ball \$2.50. Winchester leather case for telescope, \$3.50. Winchester 1886 caliber .45-70 rifle, 26 inches half octagon, half magazine. Lyman gold bead front and Marble flexible rear. Trap in butt. Little used, few spots in bore but gun is accurate, \$15.00. Winchester mould for .45 caliber .405 bullet, \$1.00. I. M. Massey, 337 East 2nd St., Sheridan, Wyo.

FOR SALE—In perfect condition, Colt's New Service Special Target 7 1/2 inch, .44 Russian. Ideal Reloading Tools 255, 205, (Anderson) and Round Bullet Moulds, \$29.00. Two Merwin & Hulbert .44-40. One 7 1/2 inch belt revolver, the other 3 1/2 inch Pocket Army, serviceable condition, \$15.00 each. New Ideal Loading Machine for 10 and 12 shot shells, \$10.00. W. E. Forbes, Richibucto, N. B., Canada.

FOR SALE OR TRADE—One Ideal No. 10 tool for Ross .280 with new full length .280 resizing die. Trade one Remington Autoloader 12ga. for 7 mm. Mauser or Mauser action, or what have you? Have two new Remington reloading-block actions, complete, \$5.00 each. **WANT**—7 mm. bullets, cases, and suitable powder; also full length 7 mm. resizing die. C. L. Elmer, Morning Star Ranch, Quemado, New Mexico.

FOR SALE—11-A Remington Automatic 11 gauge shotgun. Guaranteed like new, inside and out. First \$50.00 Money Order or Cashier's Check takes it. McKinney Rifle Club, Len G. Furr, Sec., McKinney, Texas.

FOR SALE OR TRADE—Premo post card size camera, for film packs or plates, perfect used conditions, value \$45.00, sell for \$25.00 or trade for New Service .45 Colt, 5 1/2 inch, must be perfect. Edgar Arnold, Madisonville, Ky.

FOR SALE—350 14 ga. paper pin-fire shotgun empties. **WANTED**—Eastman Graflex scale, Springfield receiver and bolt, 130 gr. .30 caliber Western O. P. bullets. Edmond Edwards, 119 E. Orange Ave., Monrovia, California.

FOR SALE—S. & W. .22 revolver, 1911 model, 6 inch barrel, \$20.00. .30-40 "9" Winchester Rifle, curly walnut shotgun butt, \$25.00. Krag Carbine, \$15.00. All good. C. A. Kinsey, Belgrade, Montana.

FOR SALE—Airedale puppies, Line bred Int. Ch. Tintin Tip Top dog ex. Man-O-War of Davishill Matron, Males, \$25.00, Females \$20.00. Send for pedigree, photos, etc. W. F. Godard, Moberly, Missouri.

WANTED—An old, but really serviceable, Colt Single Action .44-40, 7 1/2 inch barrel, unaltered. A. G. Kellenberger, 3502 So. 11th St., Tacoma, Washington.

FOR SALE—New L. C. Smith, 16 ga., 25 in. field grade; shot few times, perfect. Sent prepaid for \$28.50. John Anderson, Box 128, Houston, Penna.

WANTED—Stevens Telescope 20 power. Must be in good repair. Give complete description. F. L. Smith, 131 North 6th Street, Clarkburg, West Virginia.

FOR SALE OR TRADE—4 tube Miraco Radio set, will sell for \$75.00 or trade. **WANT**—Pair of good binoculars, and 3-A Eastman Kodak. E. D. Duncan, Dixonville, Oregon.

FOR SALE—One Winchester A-5 Telescope sight with No. 2 Mounts. Perfect condition and has special fine cross hairs. Price \$25.00, postpaid. L. Kellogg, Troy, Penna.

FOR SALE—.38 Colt auto. pistol, pocket model, good condition, \$20.00. .25-20 Winchester Octagon Barrel Takedown, good condition, \$20.00. David O. Amstutz, Ransom, Kansas.

FOR SALE—Mounted Buffalo Head. A good specimen of the Wild Bison. Very cheap at \$40. J. G. Dillin, 193 W. Front St., Media, Pa.

WANTED—Springfield '03. Condition of stock and barrel immaterial. Write description and price to Box 38, Ellwood City, Pa.

WANTED—Ottway Spotting Scope. J. A. Keating, 686 Mills Bldg., San Francisco, Cal.

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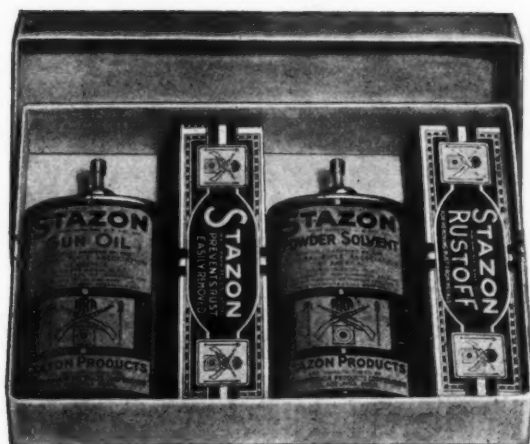
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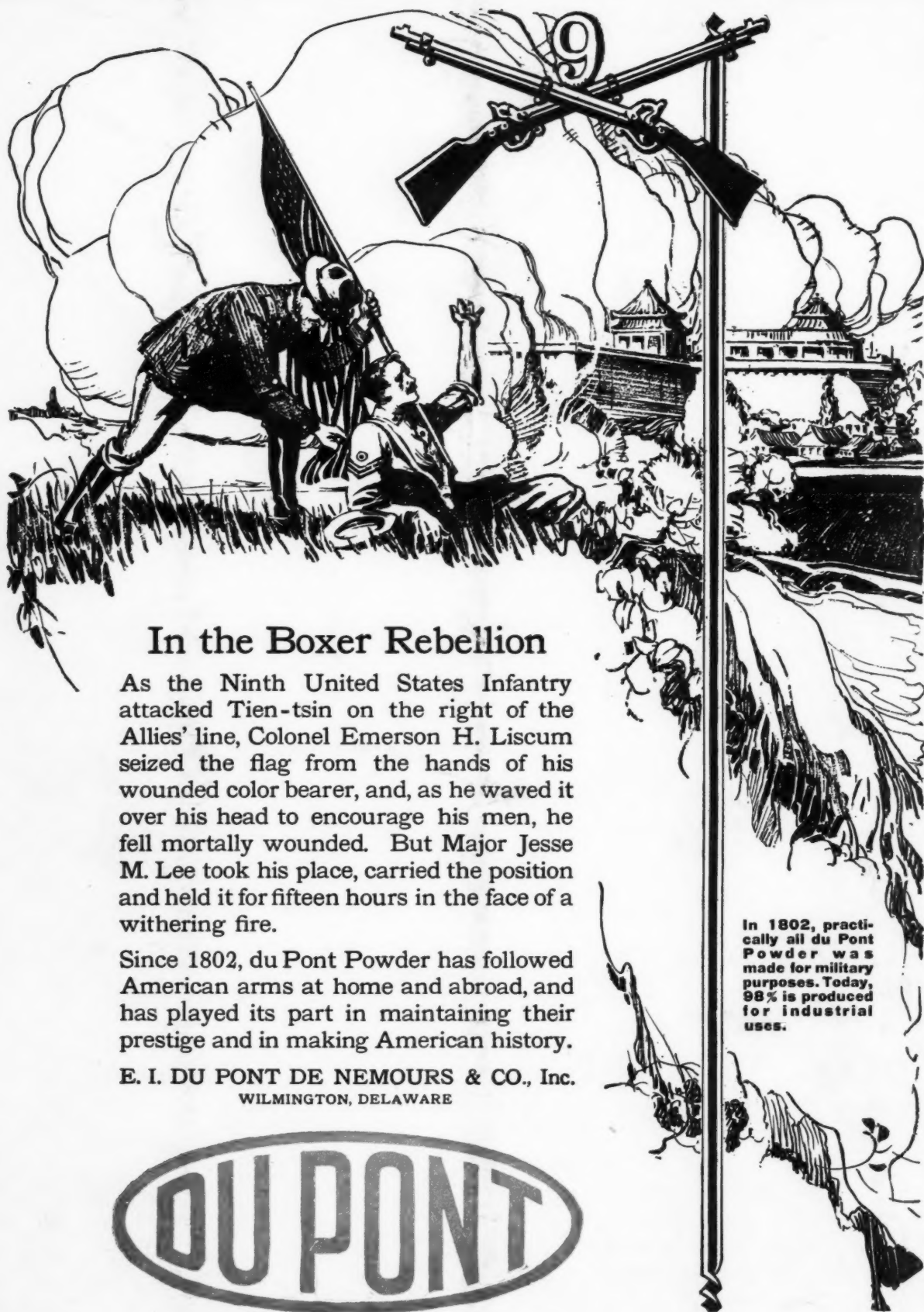
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